NATIONAL REGISTRY OF CERTIFIED MEDICAL EXAMINERS

Federal Motor Carrier Safety Administration (FMCSA)

Medical Examiner Handbook

2019 Edition

Table of Contents

Introduction 5
Part I – The Federal Motor Carrier Safety Administration (FMCSA) 5
About the FMCSA 5
About the Office of Medical Programs 5
About the National Registry of Certified Medical Examiners 6
The Medical Examiner 6
Medical Certification 7
Privacy and the Medical Examination 7
Medical Examination Report Form 7
Medical Examiner's Certificate 7
Medical Regulations Summary 7
Code of Federal Regulations — LAW 7
Medical Standards/Advisory Criteria/Guidelines 8
Medical Regulations Summary Table 9
Exemptions 10
Important Definitions 10
Regulation Definitions 10
Part II - The Job of Commercial Driving 11
FMCSA Regulates Interstate Commercial Operation 11
Drivers 11
Vehicles 11
Truck and Bus Companies 11
State Regulations 12
The Driver and the Job of Commercial Driving 12
Part III - Medical Examination Guidelines 12
About 49 CFR 391.43 13
Driver/Medical Examiner Relationship 13
Purpose of Physical Examination 13
The Issue of Risk 13
Medical Examiner Do's 13
Part IV - Physical Qualification Standards and Advisory Criteria 14
Physical Qualification Standards (Regulations) versus Advisory Criteria (Medical Guidelines) 14
About 49 CFR 391.41 14
Vision 15
Vision Regulation 49 CFR 391.41(b)(10) 16
Health History and Physical Examination 16
Visual Acuity Test Results 17
Ophthalmic disorders 17

Hearing 19
Hearing Regulation 49 CFR 391.41(b)(11) 19
Advisory Criteria/Guidance 20
Hypertension 20
Blood Pressure (BP) Regulations 49 CFR 391.41(b)(6) and 49 CFR 391.43(f) 21
Blood Pressure Recommendation Table 21
Blood Pressure Certification/Recertification Table 21
Health History and Physical Examination 22
Laboratory and Other Test Findings – Medical Examiner Instructions 22
Physical Examination – Medical Examiner Instructions 22
Determine Certification Status 23
Qualify with a Federal Exemption 25
Disqualifying Documentation 26
Cardiovascular 27
Anticoagulant Therapy 27
Abdominal Aortic Aneurysm 28
Acute Deep Vein Thrombosis 28
Thoracic Aneurysm 29
Pulmonary Emboli 29
Superficial phlebitis/Varicose Veins 29
Cardiac Arrhythmias/Defibrillators 30
Pacemakers 30
Arial Fibrillation/Ventricular Arrhythmias 31
Cardiovascular Testing 31
Myocardial Infarction 32
Angina Pectoris 33
Coronary Artery Bypass Grafting 33
Heart Failure 34
Congenital Heart Disease 34
Heart Transplantation 35
Cardiomyopathy 35
Syncope 36
Murmurs 36
Aortic Regurgitation/Stenosis 37
Mitral Valve Regurgitation/Stenosis/Prolapse 38
Respiratory (b)(5) 39
Respiratory Regulation 49 CFR 391.41(b)(5) 40
Allergies and Antihistamines 40
Asthma/COPD 41

Sleep Apnea 42
Infectious Respiratory Diseases 43
Tuberculosis 43
Cystic Fibrosis/Interstitial lung disease 44
Pneumothorax 45
Rheumatic, Arthritic, Orthopedic, Muscular, Neuromuscular, and Vascular 49 CFR 391.41(b)(7) 46
Seizures - Epilepsy 49 CFR 391.41(b)(8) 45
Headaches/Dizziness/Vertigo 46
Neuromuscular Diseases 51
Cerebrovascular Diseases 53
Traumatic Brain Injury 55
Summary Table of Neurological Waiting Periods 55
Musculoskeletal Regulations 49 CFR 391.41(b)(1)(2)(7) 55
Advisory Criteria/Guidance 56
Diabetes Mellitus 49 CFR 391.41(b)(3) 57
Diabetes Mellitus Regulation 49 CFR 391.46 57
Other Diseases 60
Nephropathy 62
Psychological Disorders and Therapies 63
Psychological Regulation 49 CFR 391.41(b)(9) 63
Advisory Criteria/Guidance 64
Psychological Disorders Therapies 64
Psychological Disorders 65
Drug Abuse and Alcoholism 70
Drug Abuse and Alcoholism Regulations 49 CFR 391.41(b)(12)(13) 70
About 49 CFR 382 Alcohol and Drug Rules 71
Advisory Criteria/Guidance 72
Medications/Drug Use 73
Medications/Drug Use Regulation 49 CFR 391.41(b)(12) 73
Advisory Criteria/Guidance 75
Schedules of Controlled Substances 21 U.S. Code 812 75
Federal Exemption Programs 76
49 CFR 381.300 Exemptions 76
Federal Vision Exemption Program 76
Qualified by Operation of 49 CFR 391.64: "Grandfathered" 76
Federal Hearing Exemption Program 77
Federal Seizure Exemption Program 77
Skill Performance Evaluation 78

Introduction

This handbook provides information and guidance to the certified medical examiner who performs the commercial driver medical examination. Determining driver medical fitness for duty is a critical element of the FMCSA safety program. Specialists, such as cardiologists may provide additional medical information, but it is the medical examiner who ultimately decides if the driver is medically qualified to drive.

FMCSA provides medical guidance to medical examiners (ME) in the form of advisory criteria, bulletins, responses to frequently asked questions, and the contents of this handbook; the purpose of which is to assist medical examiners in applying the regulations governing the physical qualifications of commercial vehicle drivers. Often, this guidance is based on reports of expert reviews or are derived from best practices. Unlike regulations, this guidance is not legally binding on medical examiners, rather is strictly advisory, and is intended to provide information that helps to apply standards in the regulations or serve as a reference. Accordingly, the examiner chooses whether to follow guidance for these regulations.

Consistent with best practices for any medical condition, in applying the physical qualification standards, the ME may consult with the individual's treating provider for additional information concerning the driver's medical history and current condition, make appropriate referrals to other medical providers, or request medical records, all with appropriate consent.

Part I- The Federal Motor Carrier Safety Administration (FMCSA)

About the FMCSA

On December 9, 1999, President Clinton signed into law the Motor Carrier Safety Improvement Act of 1999. This act transferred the Office of Motor Carriers from the Federal Highway Administration (FHWA) to establish the Federal Motor Carrier Safety Administration (FMCSA). FMCSA is one of nine U.S. Department of Transportation administrations. To learn more, visit the DOT Agencies Web page at **http://www.transportation.gov**

FMCSA is headquartered in Washington, DC and employs people in all 50 States, the District of Columbia, and Puerto Rico. FMCSA is led by an Administrator, Deputy Administrator, and Chief Safety Officer. The Chief Medical Officer and the Medical Program Division are located under the Associate Administrator for Policy and Program Offices. FMCSA partners and customers are serviced by field offices. The organizations consist of field offices, service centers, and motor carrier division offices.

FMCSA activities contribute to ensuring safety in motor carrier operations through strong enforcement of safety regulations; targeting high-risk carriers and commercial motor vehicle drivers; improving safety information systems and commercial motor vehicle technologies; strengthening commercial motor vehicle equipment and operating standards; and increasing safety awareness.

FMCSA Mission Statement

"As the lead federal government agency responsible for regulating and providing safety oversight of commercial motor vehicles (CMVs), FMCSA's mission is to reduce crashes, injuries, and fatalities involving large trucks and buses."

In carrying out its safety mandate to reduce crashes, injuries, and fatalities involving large trucks and buses, FMCSA:

- Develops and enforces data-driven regulations that balance motor carrier (truck and bus companies) safety with industry efficiency
- Harnesses safety information systems to focus on higher-risk carriers in enforcing safety regulations
- Targets educational messages to carriers, commercial drivers, and the public
- Partners with stakeholders including Federal, State, and local enforcement agencies, the

motor carrier industry, safety groups, and organized labor on efforts to reduce bus and truck-related crashes.

To learn more about FMCSA, visit http://www.fmcsa.dot.gov

Medical Programs Mission Statement

"The mission of the Medical Programs Division is to promote the safety of America's roadways through the promulgation and implementation of medical regulations, guidelines and policies that ensure commercial motor vehicle drivers engaged in interstate commerce are physically qualified to do so."

To promote safety, the Medicals Program Division:

- Oversees the national medical certification process for commercial motor vehicle drivers who operate in interstate commerce
- Develops and implements medical regulations, policies, and procedures
- Oversees and supports the Medical Review Board in accordance with the Federal Advisory Committee Act
- Develops and implements the National Registry program- a national medical examiner system and a linked national driver medical reporting system
- Conducts and oversees the Agency's medical exemption and certificate programs
- Serves as the lead Federal agency for the regulation of commercial motor vehicle driver health and safety and conducts relevant medical research

To learn more about the Medical Programs visit http://www.fmcsa.dot.gov/regulations/medical

About the National Registry of Certified Medical Examiners

The National Registry of Certified Medical Examiners Mission Statement

"The primary mission of the National Registry of Certified Medical Examiners is to improve highway safety by producing trained, certified medical examiners who can effectively determine if a commercial motor vehicle driver's health meets Federal Motor Carrier Safety Administration standards."

The certified medical examiner would:

- Demonstrate an understanding of FMCSA physical qualification requirements and the demands of commercial driving, driver tasks, and the work environment.
- Perform driver certification examinations in accordance with FMCSA physical qualification requirements and medical guidelines.

To learn more about the National Registry of Medical Examiners visit http://nationalregistry.fmcsa.dot.gov

The Medical Examiner

The Federal Motor Carrier Safety Regulations identify a person who can be a medical examiner by two criteria: professional licensure and scope of practice that includes performing physical examinations.

Medical examiner is a person who is licensed, certified, and/or registered, in accordance with applicable state laws and regulations to perform physical examinations. The medical examiner is deemed qualified by being certified and registered on FMCSA's National Registry of Medical Examiners. The term includes advanced practice nurses, doctors of chiropractic, doctors of medicine, doctors of osteopathy, physician assistants, or other medical professionals authorized by applicable State laws and regulations to perform physical examinations. Only medical examiners

who are certified and registered on FMCSA's National Registry of Medical Examiners can issue Medical Examiner's Certificates.

Medical Certification

Medical certification in accordance with Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards is generally required (with a few exceptions) when the driver is operating a commercial motor vehicle in interstate commerce that:

- Has a combined gross vehicle weight or weight rating of 10,001 lbs. or more
- Is designed or used to transport more than 8 passengers (including the driver) for compensation
- Is designed or used to transport more than 15 passengers (including the driver) whether for compensation or not
- Transports hazardous materials in quantities that require placarding under the hazardous materials regulations

Any driver whose ability to perform his or her normal duties has been impaired by a physical or mental injury or disease must undergo a medical examination, even if the medical examiner's certificate has not expired.

The medical examiner's certificate expires at midnight of the day, month, and year written on the certificate. There is no grace period on the expiration. The driver must be re-examined and recertified to continue to drive legally.

Privacy and the Medical Examination

Regulatory requirements take precedence over the Health Insurance Portability and Accountability Act of 1996 (HIPAA). There are potential subtle interpretations that can cause significant problems for the medical examiner. What information must or can be turned over to the carrier is a legal issue, and if in doubt, the examiner should obtain a legal opinion.

Medical Examination Report Form (Form MCSA-5876)

Although the Federal Motor Carrier Safety Regulations do not require the medical examiner to give a copy of the Medical Examination Report Form to the employer, the regulations do not prohibit employers from obtaining copies of the Medical Examination Report Form. However, medical examiners must have a release form signed by the driver if the employer wishes to obtain a copy of the Medical Examination Report Form.

Employers must comply with applicable State and Federal laws regarding the privacy and maintenance of employee medical information. For information about the provisions of the Standards for Privacy of Individually Identifiable Health Information (the Privacy Rule) contact the U.S. Department of Health & Human Services, Office of Civil Rights at http://www.hhs.gov/ocr/hipaa/. The HIPAA toll-free information line is: 1-866-627-7748.

Medical Examiner's Certificate (Form MCSA-5875)

The distribution of the medical examiner's certificate is addressed in 49 CFR 391.43 (g). If the medical examiner finds that the driver is physically qualified to drive a commercial motor vehicle in accordance with §391.41(b), the medical examiner must complete a medical examiner's certificate and furnish the original to the driver. The examiner must provide a copy to a prospective or current employing motor carrier who requests it, A release form is not required. The motor carrier is required to keep a copy of the certificate in the driver qualification file.

The medical examiner should also keep a copy or electronic version of the medical examiner's certificate on file. The driver may request a replacement copy of the certificate from the medical examiner or get a copy of the certificate from the motor carrier. To view 49 CFR 391.43(g), visit http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.aspx?reg=391.43#49CFR391.43(g)

Medical Regulations Summary

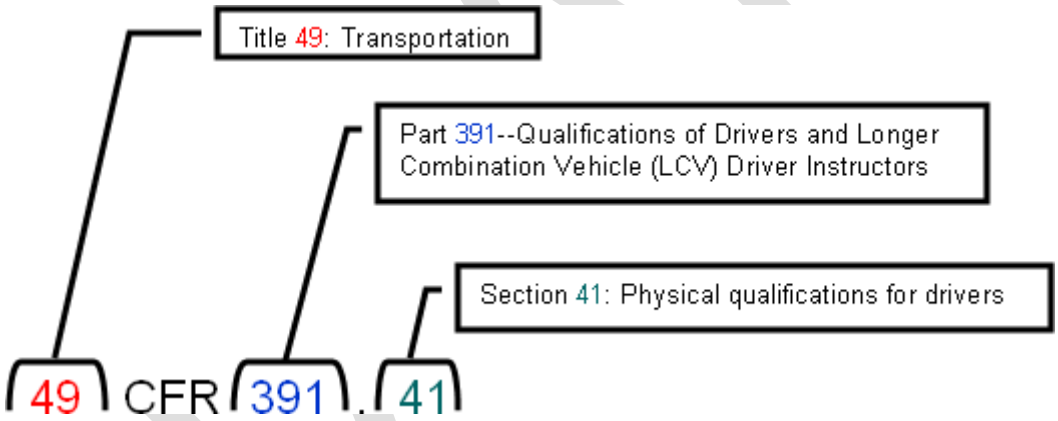
Code of Federal Regulations - LAW

The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal government. It is divided into 50 titles that represent broad areas subject to Federal regulation. Title 49 pertains to Transportation. Each title is divided into chapters, which usually bears the name of the issuing agency. Chapter III of Title 49 is "Federal Motor Carrier Safety Administration, Department of Transportation."

Each chapter is further subdivided into parts that cover specific regulatory areas. Part 391 is Qualifications of Drivers and Longer Combination Vehicle (LCV) Driver Instructors. Large parts may be subdivided into subparts. Subpart E of Part 391 is Physical Qualifications and Examinations.

Parts are organized in sections. Citations for the CFRs include the title, part, and section numbers (e.g. 49 CFR 391.41). When the title is understood, the citation may just include the part and section (e.g.§391.41).

Regulations are law and must be followed.
The Federal Motor Carrier Safety Regulations (FMCSRs), found at 49 CFR parts 350-399, are legal requirements for interstate commerical vehicles, drivers, and motor carriers. It is common to see references to FMCSA's physical qualification "standards." Such standards are contained in the regulations set forth at 49 CFR 391.41 (b) and are therefore law.



Advisory Criteria Guidance

FMCSA provides medical guidance and advisory criteria to provide recommendations and information to assist medical examiners in applying the regulations. These recommendations and guidance often are based on expert review or considered best practice. Unlike regulations, the recommendations and other guidance are not legally binding. Rather, such guidance is strictly advisory, not mandatory and intended to provide information that helps to support the application of the standards in the regulations or to serve as a reference. Accordingly, the examiner may or may not choose to follow these recommendations.

Medical Regulations Summary Table

The medical examiner should be familiar with the regulations listed in the following table:

Regulation	Description
49 CFR 391.41	Describes the physical qualification requirements for drivers. The 13 standards are used to determine driver medical fitness for duty. Four of the standards: vision, hearing, epilepsy, and diabetes mellitus have objective disqualifiers that do not depend on medical examiner clinical interpretation. These standards are the "non-discretionary" standards. For the other nine "discretionary" standards, the medical examiner makes a clinical judgment in accordance with the physical qualification requirements for driver certification.
49 CFR 391.43	Describes the responsibilities of the medical examiner, the exceptions for drivers operating in an exempt intracity zone or pursuant to the grandfather provision, the sample Medical Examination Report Form, and the medical examiner's certificate.
49 CFR 391.45	Identifies who must have the commercial motor vehicle (CMV) driver physical examination.
49 CFR 391’46	Describes the physical qualification standards for an individual with diabetes mellitus treated with insulin for control
49 CFR 391.47	Describes the process for conflict resolution when there is a disagreement between a medical examiner for the driver and a medical examiner for the motor carrier concerning driver qualifications.
49 CFR 391.49	Describes the Skill Performance Evaluation (SPE) Certification Program, which is an alternative physical qualification standard for the driver with a loss of limb(s) who cannot physically qualify to drive under §391.41(b)(1) or (b)(2). The driver must be otherwise qualified to drive a CMV and meet the provisions of the alternate standard.
49 CFR 391.62	Describes limited exemptions for intra-city zone drivers.
49 CFR 391.64	Describes grandfathering for certain drivers who participated in vision and diabetes waiver study programs. These drivers may be certified as long as they continue to meet the provisions outlined in 49 CFR 391.64 and continue to meet all other qualification standards.
49 CFR 390	Includes general information and definitions and the regulations governing the National Registry of Certified Medical Examiners.
49 CFR 40	Includes regulations for medical review officers and substance abuse professionals, including drug and alcohol testing procedures.

Table 1 - Medical Regulations Summary Table

To view the regulations in the Medical Regulations Summary Table, visit:
http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrguide.aspx?section_type=A

Exemptions

An exemption provides temporary regulatory relief from one or more of the FMCSRs for commercial drivers. Relief from a regulation is for up to 2 years and may be renewed. Currently, FMCSA has three medical Driver Exemption Programs:

- Federal Vision Exemption Program
- Federal Hearing Exemption Program
- Federal Seizure Exemption Program

The medical examiner cannot issue an exemption. The role of the medical examiner is to determine if the driver is "otherwise qualified." As part of the application procedure, the driver must obtain a medical examination, and the medical examiner determines whether the driver is "otherwise qualified" if accompanied by the Federal vision, hearing or seizure exemption. Federal exemptions require the driver to have an annual medical examination for maintenance and renewal of the exemption.

Important Definitions

Regulation Definitions

Medical examiners should be familiar with frequently used terms in the context of the FMCSRs and the medical examiner role. Select terms from 49 CFR 390.5T and 49 CFR 40 follow.

Definitions from Regulation 49 CFR 390.5

Commercial Motor Vehicle: means any self-propelled or towed motor vehicle used on a highway in interstate commerce to transport passengers or property when the vehicle:

1. Has a gross vehicle weight rating, gross combination weight rating, gross vehicle weight, or gross combination weight, of 4,536 kg (10,001 pounds) or more, whichever is greater; or
2. Is designed or used to transport more than 8 passengers (including the driver) for compensation; or
3. Is designed or used to transport more than 15 passengers, including the driver, and is not used to transport passengers for compensation; or
4. Is used in transporting material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C.

Driver: means any person who operates any commercial motor vehicle.
Interstate Commerce: means trade, traffic, or transportation in the United States:

1. Between a place in a State and a place outside of such State (including a place outside of the United States)
2. Between two places in a State through another State or a place outside of the United States
3. Between two places in a State as part of trade, traffic, or transportation originating or terminating outside the State or the United States.

Intrastate Commerce: means any trade, traffic, or transportation in any State which is not described in the term "interstate commerce."

Medical Examiner: means an individual certified by FMCSA and listed on the National Registry of Certified Medical Examiners.

Motor Carrier: means a for-hire motor carrier or a private motor carrier. The term includes a motor carrier's agents, officers, and representatives as well as employees responsible for the hiring, supervising, training, assigning, or dispatching of drivers and employees concerned with the installation, inspection, and maintenance of motor vehicle equipment and/or accessories. For purposes of

subchapter B, this definition includes the terms "employer" and "exempt motor carrier." For additional definitions from 49 CFR 390.5, visit http://www.fmcsa.dot.gov/regulations/title 49/section/390.5.

49 CFR 40.3 Definition of Terms Used in This Regulation

The Omnibus Transportation Employee Testing Act of 1991 requires drug and alcohol testing of safety sensitive transportation employees in aviation, trucking, railroads, mass transit, pipelines, and other transportation industries. The Department of Transportation (DOT) publishes rules on who must conduct drug and alcohol tests, how to conduct those tests, and what procedures to use when testing.

Medical Review Officer (MRO): A person who is a licensed physician and who is responsible for receiving and reviewing laboratory results generated by an employer's drug testing program and evaluating medical explanations for certain drug test results.

Substance Abuse Professional (SAP): A person who evaluates employees who have violated DOT drug and alcohol regulations and makes recommendations concerning education, treatment, follow-up testing, and aftercare.

For additional definitions from 49 CFR 40, visit http://www.transportation.gov/odapc/part40

Part II- The Job of Commercial Driving

FMCSA Regulates Interstate Commercial Operation

The Federal Motor Carrier Safety Administration (FMCSA) regulates interstate commercial operations including drivers, the trucks and buses the drivers operate, the motor carrier, and the transportation of hazardous materials in a quantity requiring placards. A safety risk in any one or more of these commercial operations components can endanger the safety and health of the public and the driver.

Drivers

Commercial Motor Vehicle drivers are required by law to comply with FMCSA physical qualification standards. In addition to medical fitness for duty certification, other regulations affecting the CMV driver include drug and/or alcohol testing, record keeping, and hours of service.

Vehicles

CMVs include trucks and buses subject to regulations governing inspection, repair, and maintenance.

Truck and Bus Companies

Motor carriers, both for-hire and private truck and bus companies must comply with FCMSA regulations governing their drivers.

In the Federal Motor Carrier Safety Regulations (FMCSR), the term "motor carrier" refers to:

- Agents for motor carriers, officers, representatives, employees responsible for the hiring, supervising, training, assigning, and dispatching of drivers, employees concerned with the installation, inspection, and maintenance of motor vehicle equipment and accessories, employer, and exempt motor carrier

Motor carriers are responsible for ensuring that the driver meets the general qualification requirements of 49 CFR 391.11. These requirements include that an individual is physically qualified to drive a commercial motor vehicle, as evidenced by having a current medical examiner's certificate.

The driver must:

- Be capable of safely operating the CMV

- Have a current Medical Examiner's Certificate on file
- Have only one valid CDL operator's license
- Have provided the motor carrier with required background and violations information
- Be qualified to drive a CMV under the rules in 49 CFR 391.15
- Have successfully completed a driver's road test or equivalent

Commercial driver medical fitness for duty records must include all Federal physical qualification requirements found on the Medical Examination Report Form. The commercial driver must also meet 49 CFR 391.41 (b) which states (b) A person is physically qualified to drive a commercial motor vehicle if that person- (1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a skill performance evaluation certificate pursuant to 49 CFR 391.49. The driver could fail a motor carrier pre-employment driver certification examination and still meet the Federal physical qualification requirements for certification and issuance of a Medical Examiner's Certificate.

State Regulations

States regulate intrastate commerce and commercial drivers who are not subject to Federal regulations. Most States are required, at a minimum, to adopt Federal physical qualification requirements that are the same as, or have different effect as, the Federal standards. Some States may have adopted variances that even have additional, different, or more stringent requirements. If a driver is operating exclusively in intrastate commerce, medical examiners are responsible for knowing the driver regulations for the State or States in which they practice and in which such drivers are operating.

Driver Certification

Part 391 of title 49 of the CFR Qualifications of drivers and longer combination vehicle (LCV) driver instructors establishes the minimum qualifications for persons who drive a CMV. There are seven subparts. A medical examiner should be knowledgeable regarding the physical qualification requirements of the driver specified in Subpart E — Physical qualifications and examinations, which includes 49 CFR 391.41 through 391.49.

The medical examiner is responsible for ensuring that only the driver who meets the Federal physical qualification requirements is issued a Medical Examiner's Certificate. When a medical examiner issues a Medical Examiner's Certificate, it is a certification that the driver is medically fit for duty and can perform the driver role. Drivers generally may be certified for a maximum of 2 years. Drivers who operate a commercial vehicle only within an exempt intra city zone pursuant to 49 CFR 391.62, are grandfathered pursuant to 49 CFR 391.64, have diabetes mellitus with insulin for control and obtained certification pursuant to 49 CFR 391.46, or have received Federal Exemptions may be certified for a maximum of 1 year. Drivers may be certified less than the maximum periods if deemed necessary by the examiner. The driver is responsible for maintaining medical certification.

Part III- Medical Examination Guidelines

Driver/Medical Examiner Relationship 49 CFR 391.43

Medical Examination; Certificate of Physical Examination

Purpose of Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a "medical fitness for duty" examination.

As a medical examiner, your fundamental obligation during the physical assessment is to establish whether a driver has a disease or disorder that interferes with the ability to safely operate a CMV, presents an unacceptable risk for sudden death, or presents an unacceptable risk increases the risk for sudden death, or increases the risk for incapacitation, thus endangering the driver public safety.

Risk is the probability of an event occurring within a certain period of time. Determining "unacceptable risk" is both a medical and societal decision.

Consider Safety Implications

As you conduct the physical examination to determine if the driver is medically fit to perform the job of commercial driving, things to consider include but are not limited to:

- **Physical condition**
  - Symptoms: Does a benign underlying condition with an excellent prognosis have symptoms that interfere with the ability to drive
  - Incapacitation: Is the onset of potential incapacitating symptoms so rapid that symptoms interfere with safe driving, or can the driver stop the vehicle safely before becoming incapacitated? Is the onset of potential incapacitating symptoms so gradual that the driver is unaware of diminished capabilities, thus adversely impacting safe driving?

- **Mental condition**
  - Cognitive: Can the driver process environmental cues rapidly and make appropriate responses, independently solve problems, and function in a dynamic environment?
  - Behavior: Are the driver interactions appropriate, responsible, nonviolent, and non-aggressive?

- **Medicinal treatment**
  - Medication interactions: Is the driver taking a combination of medications that may contribute to increased side effects
  - Side effects: Can side effects interfere with safe driving (e.g., drowsiness, dizziness, orthostatic hypotension, blurred vision, and changes in mental status)?

Medical Examiner Do's

As the medical examiner, you are examining for medical fitness for duty, not diagnosing or treating personal medical conditions. You have a responsibility to educate and refer the driver for further evaluation if you suspect an undiagnosed or worsening medical problem. Keep the following in mind:

- Comply with FMCSA regulations
- Consider FMCSA recommendations
- Seek further testing/evaluations for those medical conditions of which you are unsure
- Verbally refer the driver to his/her personal health-care provider for diagnosis and treatment of potential medical conditions discovered during your examination.
- Promote public safety by verbally educating the driver about:
  - Side effects caused by the use of prescription and/or over-the-counter medications.
  - Medication warning labels and how to read them.
  - The importance of seeking appropriate intervention for non-disqualifying conditions that if neglected could result in serious illness and possible future disqualification.

Medical Examination

As a medical examiner, you must perform the driver physical examination and record the findings on the Medical Examination Report Form (MCSA-5876).

Driver certification is determined based on whether or not the driver meets the requirements of the Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards cited in 49 CFR 391.41(b).

The purpose of this overview is to familiarize you with the sections and data elements on the Medical Examination Report Form, including, but not limited to:

- Organization of the form
- Required signatures
- Minimum documentation

Part IV Physical Qualification Standards and Guidance

As a certified medical examiner, you are responsible for determining if the commercial motor vehicle driver is medically qualified and safe to drive under the Federal Motor Carrier Safety Regulations (FMCSRs). It is important to distinguish between medical regulations and medical guidance. Medical regulations (49 CFR 391.41) are requirements issued by FMCSA. Medical guidance issued by FMCSA include advisory criteria, regulatory guidance and medical bulletins. The purpose of FMCSA's medical guidance is to provide recommendations and information to assist medical examiners in applying the regulations. Unlike regulations, the recommendations and other guidance are not legally binding. Rather, such guidance is strictly advisory, not mandatory and intended to provide information that helps to support the application of the standards in the regulations or to serve as a reference. Accordingly, the examiner may or may not choose to follow the recommendations.

Other sources of guidance, which can be used by the medical examiner include, but are not limited to, medical expert panel reports, medical reports from literature, and Medical Review Board (MRB) recommendations.

The physical qualification regulations for CMV drivers in interstate commerce are found at Section 391.41(b) of the FMCSRs.

The advisory criteria under 391.41 are recommendations to help you as a medical examiner perform medical examinations and determine the medical fitness for duty of a driver. They are accessible on the FMCSA Web site.

You are encouraged to have a copy of the Medical Examination Report form for reference as you review the remaining topics. Visit medicalexaminationmcsa587511302021.pdf to access a copy of the Medical Examination Report Form (MCSA-5875).

About 49 CFR 391.41

49 CFR 391.41 Physical qualifications for drivers describes the medical fitness for duty qualification standards that an individual must meet in order to be qualified to operate an interstate commercial motor vehicle (CMV).

- You can access 391.41 on the FMCSA Web site at http://www.fmcsa.dot.gov/ by entering "391.41" in the "RULES & REGULATIONS" text box, and selecting "Go." From the same area of the Web site, you can also access 391.41 by selecting the "Medical Program" link and then the "Physical Qualifications" link.

Section 1- Driver Information

This section is filled out by the driver which consists of Personal Information, the Driver's Health History, and the CMV Driver's Signature.

By signing the Medical Examination Report Form, the driver:

- Certifies that information is "accurate and complete"
- Acknowledges that providing inaccurate or false information or omitting information could:
  - Invalidate the examination and any certificate issued based on it
  - Result in civil or criminal penalties against the driver

Section 2- Examination Report

This section is filled out by the medical examiner which consists of Driver Health History Review, Testing, Physical Examination, and Medical Examiner's Determination for both Federal and State regulations.

- The examiner may comment on the driver's responses to the "health history" questions that may affect the driver's safe operation of a commercial motor vehicle (CMV) including all "yes" and "not sure" answers
- Testing involves blood pressure readings and pulse, height and weight, urinalysis, vision and hearing
- Physical Exam allows the medical examiner to check the body systems for abnormalities
- Medical Examiner Determination (Federal) assesses if the driver meets the standards specified in 49 CFR 391.41(b). If all the standards are met as specified, the medical examiner then completes a Medical Examiner's Certificate as specified in 49 CFR 391.43(h), as appropriate
- Medical Examiner Determination (State) assesses if the driver meets the standard outlined in 49 CFR 391.41(b) with any applicable State variances (which will only be valid for intrastate operations). If the standard is met as outlined in 49 CFR 391.41 with applicable State variances, the medical examiner then completes a Medical Examiner's Certificate, as appropriate

Physical Examination Standards

Vision

Regulation 49 CFR 391.41 (b) (10): "A person is physically qualified to drive a commercial vehicle if that person – has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70 ° in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing red, green, and amber."

Vision — Medical Examiner Instructions

Regulation: A driver is required to have:

- Distant visual acuity of at least 20/40 (Snellen) in each eye, with or without corrective lenses
- Distant binocular visual acuity of at least 20/40 (Snellen) in both eyes, with or without corrective lenses
- Field of vision of at least 70° in the horizontal meridian in each eye
- Ability to recognize and distinguish among the colors of traffic signals and devices showing the standard red, amber, and green

  -If corrective lenses are necessary to meet the vision qualification requirements then the lenses must be used while driving and must be documented on the medical examiner certificate.

Disqualifying Vision

- Monocular vision except with an exemption

- Failure to meet any part of the vision testing criteria with one eye or both eyes

Medical Advisory Criteria

- Use of telescopic lenses is not acceptable

Specialist Vision Certification

The vision testing may be completed by an ophthalmologist or optometrist but the medical examiner ultimately determines driver certification status. A specialist vision examination:

- Is required for obtaining and renewing a medical exemption
- May be necessary to obtain adequate evaluation of vision with specialized diagnostic equipment

When the vision test is completed by an ophthalmologist or optometrist that provider must fill in the date name, telephone number, license number, and State of issue, and sign the examination form. The medical examiner can attach the specialist report to the Medical Examination Report Form or write in the information on the Medical Examination Report Form to see the attached documentation.

Health History and Physical Examination

Health History

Ask the driver about any changes in vision, night vision, ophthalmic disorders such as cataracts, glaucoma, retinopathy, or macular degeneration, and use of ophthalmic medications or anything else that could interfere with safe driving.

Physical Examination

Examine the eyes for any potential abnormalities including abnormal pupils, nystagmus or exophthalmos.

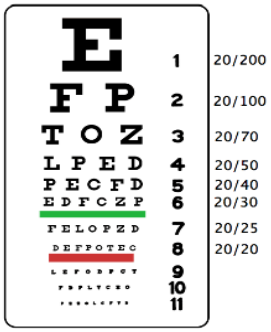
Required Tests

Central visual acuity

The Snellen chart or the Titmus Vision Tester measures static central vision acuity. The requirement for central distant visual acuity is at least 20/40 in each eye and distant binocular visual acuity of at least 20/40. Test results must be recorded in Snellen-comparable values.

Snellen Distant Acuity Test

- The Snellen wall chart should be 20 feet away from the driver.
    - Measure distance
    - Mark testing location
- The chart should be illuminated with white light
- The driver may wear corrective lenses during the examination
- When the driver is reading larger lines easily, the medical examiner may ask the driver to skip to smaller line

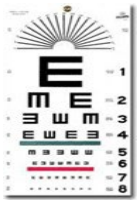


The above Snellen Chart is for illustrative purposes only

Visual Acuity Test Results

The Snellen eye test results use 20 feet as the norm, represented by the numerator in the Snellen test result. The number of the last line of type the driver read accurately is recorded as the denominator in the Snellen test result. If a test other than the Snellen is used to test visual acuity, the test results should be recorded in Snellen equivalent values.

Types of Snellen charts



There are versions of the Snellen chart that compensate for failure to read letters because of limited English reading skill, not because of poor eyesight. One example is the "Snellen Eye Chart - Illiterate" that requires the individual to indicate the orientation of the letter "E" on the chart.

Peripheral Vision

The requirement for peripheral vision is at least 70° in the horizontal meridian for each eye. In the clinical setting, some form of confrontational testing is often used to evaluate peripheral vision. When test results are inconclusive, the evaluation should be performed by a specialist with equipment capable of precise measurements.

Right eye examination

1. Stand or sit approximately two feet in front of the driver so that your eyes are at about the same level as the eyes of the driver
2. Instruct the driver to use the palm of the left hand to cover the left eye.
3. Ask the driver to fixate on your left eye.
4. Extend your arms forward and position your hands halfway between yourself and the driver. Position your right hand one foot to the right of the straight-ahead axis and six inches above the horizontal plane. Position your left hand one-and-a-half feet to the left of the straight- ahead axis and six inches above the horizontal plane.
5. Ask the driver to confirm when a moving finger is detected. Repeat the procedure with your hands positioned six inches below the horizontal meridian.

Left eye examination

Repeat the procedure for the left eye (steps 2 through 5), making sure the driver fixates on your right eye and the hand placement is appropriately reversed.

Ophthalmic Medications

Determine if the treatment is having the desired effect of preserving vision that meets qualification requirements without any visual and/or systemic side effects that interfere with safe driving (e.g., stinging, blurring, decreased night vision, sensitivity to glare, headache, or allergic reaction).

Ophthalmic Disorders

Cataracts

Cataracts are a common cause of visual disturbances in the adult population consisting of a slow, progressive opacification of the crystalline lens of the eye which distorts the optical passage of light to the retina resulting in diminished visual acuity. Glare, particularly during night driving in the face of oncoming headlights, may be an early symptom of cataracts. Treatment for cataracts is surgical removal and placement of an intraocular lens.

Glaucoma

Glaucoma can cause deficits in peripheral vision. The abnormal regulation of painless intraocular pressure can result in gradual progressive atrophy of optic nerve cells resulting in the gradual loss of the peripheral visual field before symptoms are noticed. Treatment consists of lowering the intraocular pressure with medication/drops.

Macular Degeneration

Macular degeneration is a leading cause of untreatable legal blindness in the United States causing slow loss of central vision. The 10% malignant form causes rapid loss of central vision. Peripheral vision is generally spared in macular degeneration. Therapeutic options are limited.

Retinopathy

Non-inflammatory damage to the retina of the eye has many causes with the predominant one being diabetes mellitus causing microaneurysms and intraretinal hemorrhages. Fluid leakage near the macula (diabetic macular edema) can create partial scotomas in central vision or cause gross hemorrhage in the eye which can obscure vision and eventually lead to retinal detachment and blindness. Subtler visual modalities such as contrast sensitivity, flicker fusion frequency, and color discrimination may also be affected.

Under the 2018 diabetes standard in 391.46(c)(2)(ii), for individuals with diabetes mellitus that is treated with insulin, the individual is not physically qualified on a permanent basis to operate a commercial motor vehicle if he or she has either severe non-proliferative diabetic retinopathy or proliferative diabetic retinopathy. This automatic disqualification does not apply to noninsulin treated diabetes or retinopathy generally.

Federal Vision Exemption for the otherwise medically qualified driver

Monocular vision is disqualifying. The medical examiner should complete the certification examination of the driver with monocular vision and determine if the driver is otherwise qualified. The driver with monocular vision who is otherwise qualified may want to apply for a Federal vision exemption.

Federal Vision Exemption

At the annual recertification examination, the driver presents a valid vision exemption and a copy of the specialist eye examination report before receiving the medical examiner's certificate. Certify the driver for up to 1 year. Mark the "accompanied by" exemption checkbox and write "vision" to identify the type of Federal exemption.

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/driver-medical-requirements/10451/vision-exemption-package-0918.pdf

Hearing

Hearing Regulation 49 CFR 391.41(b)(11): "A person is physically qualified to drive a commercial motor vehicle if that person:

- First perceives a forced whispered voice in the better ear at not less than 5 feet with or without the use of a hearing aid or,
- if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ASA Standard) Z24.5–1951"

The required tests screen for hearing loss in the range of normal conversational tones. Two tests can be used to screen hearing: a **forced whisper** test or an **audiometric** test. The testing area should be free from noise that could interfere with a valid test. Measure and mark the five-foot passing distance.

- Either test may be administered first. Usually the forced whisper test is administered first followed by the more precise audiometric testing should the individual fail the forced whisper test

- Test both ears

- Administration of the second test may be omitted when the test results of the initial test meet the hearing requirement for that test

- When a hearing aid is used to meet the hearing qualification requirement, the hearing aid must be used while driving. The examiner should advise the driver to carry a spare power source for the hearing aid

- If the driver uses a hearing aid while testing, or to meet the standard, mark " hearing aid required to meet standard" box on both the Medical Examination Report form and the medical examiner's certificate

- If testing is performed by use of an audiometric device, the driver must "pass" it or be disqualified

Right Ear Examination:

1. Have the driver cover the left ear
2. Stand to the side or behind the driver to eliminate visual cues
3. From the measured five-foot distance from the right ear, exhale fully and then whisper a sequence of words, numbers, or letters. (Avoid using only s-sounding words)
4. Ask the driver to repeat the whispered sequence
5. To pass, the driver must respond correctly

Left Ear Examination:

Repeat the procedure for the left ear, making sure that the right ear is covered and that you are positioned the measured five-foot distance from the left ear.

Complete the forced whisper test for both ears, whether or not the initial test result meets the hearing requirement.

Audiometric Test

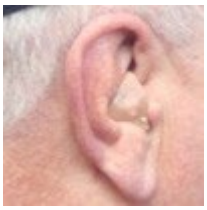
The hearing qualification requirement for the Audiometric test:

- The driver has an average hearing loss (average of test results for 500 hertz (Hz), 1,000 Hz, and 2,000 Hz) in one ear at less than or equal to 40 dBs

The hearing requirement for an audiometric test is based on hearing loss only at the 500 Hz, 1,000 Hz, and 2,000 Hz frequencies that are typical of normal conversation.

1. Record hearing test results for each ear at 500 Hz, 1,000 Hz, and 2,000 Hz (ANSI standard).
2. Average the readings for each ear by adding the test results and dividing by 3.
3. To pass, one ear must show an average hearing loss that is less than or equal to 40 dBs.

Hearing aid and cochlear implant
When a hearing aid is to be worn during audiometric testing, an audiologist or hearing aid center should perform the test using appropriate audiometric equipment. Cochlear implant is an acceptable option for meeting the deficiency as long as the driver can meet the standard.



Health History and Physical Examination

Health History
Ask about changes in hearing, ringing in the ears, difficulties with balance and dizziness.

Physical Examination
Examine the ears, and note and discuss abnormal findings, including the impact on driving and certification.

Advisory Criteria/Guidance

The medical examiners must exercise their independent medical judgment when making a final determination and the decision should be based on the nature of the disease and the impact on driving. Examples are

- **Meniere's disease-**vertigo attack can last minutes to 24 hours, tinnitus, hearing loss
- **Vertigo**:

  a) Benign positional vertigo

  b) Acute and chronic peripheral vestibulopathy
- **Labyrinthine Fistula-** dizziness, imbalance, and hearing loss
- **Nonfunctioning Labyrinth-** dizziness, imbalance, and hearing loss

Blood Pressure/Pulse 49 CFR 391.41 (b)(6)

Regulation: You must measure:

Blood Pressure (BP)

- Only BP readings taken during the driver physical may be used for certification decisions.
- BP greater than 139/89 must be confirmed with a second measurement taken later during the examination.
- Record additional BP measurement in your comments on the Medical Examination Report form.

Pulse

- Document pulse rhythm by marking the "Regular" or "Irregular" box.
- Record pulse rate.

Blood Pressure — Stages of Hypertension Guidelines Table

According to recommendations based on the 1997 advisory criteria guideline, a one-time, three-month medical certificate is granted in two cases: where the driver has a BP that is equivalent to Stage 2 hypertension, or a driver that was certified with Stage 1 hypertension has not achieved a BP less than or equal to 140/90 at recertification. This three-month certificate is a one-time issuance for the recertification period and is not intended to mean once in the driver's lifetime. Medical examiners should follow their independent judgment and best practices when determining whether hypertension is likely to

interfere with an individual's ability to operate a CMV safely and the length of the certification.

Medical Examination Report Form: Blood Pressure/Pulse Rate Recommendation Table

The following table corresponds to the first two columns of the recommendation table in the Medical Examination Report form. Column one has the blood pressure readings, and column two has the category classification.

Reading	Category
140-159/90-99	Stage 1 hypertension
160-179/100-109	Stage 2 hypertension
≥ 180/110	Stage 3 hypertension

Blood Pressure Recommendation Table Columns 1 and 2

Example: When a BP reading is a value where the individual systolic and diastolic readings are in different stages, you should classify the reading by the higher stage. For example, 168/94 and 148/104 are both examples of Stage 2 hypertension.

STAGE	CERTIFY	RECERTIFY	COMMENTS
1 140/90-159/99	1 Year	1 Year	Any Diagnosis of hypertension. May be controlled with diet, exercise, or medications
2 160-179/100-109	3 Months	1 Year	If the driver has **Stage 2** BP untreated at the time of the examination, a 3-month certificate is issued. When the BP is **Stage 1** at the end of 3 months, a certificate may be issued for the remaining 9 months.
3 ≥ 180/110	Disqualified	6 Month Intervals	If the driver was ever at **Stage 3**, recertification must always be at 6 month intervals if the driver is on BP medications and the BP at the time of recertification is at Stage 1 or better.

Blood Pressure Certification/Recertification Recommendation Table

As the medical examiner, your fundamental obligation is to establish whether a driver has high BP that can interfere with the ability to operate a CMV safely thus endangering public safety. The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors. Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions.

Urinalysis

Regulation: A urinalysis must be obtained (dip stick)

Test for:

- Specific gravity
- Protein (proteinuria)
- Blood (hematuria)
- Glucose (glycosuria)

Additional Tests and/or Evaluation from a Specialist
Evaluate the urinalysis test results with other physical findings to determine the next step:

1. Glycosuria: blood glucose test
2. Proteinuria: assess renal function
3. Hematuria: assess renal function

Physical Examination
The Medical Examiner completes section 2

Physical Examination — Record Driver Height and Weight
Regulation: You must measure and record driver height (inches) and weight (pounds)

The physical qualification standards do not include any maximum or minimum height and weight requirements. You should consider height and weight factors as part of the overall driver medical fitness for duty.

Physical Examination — Medical Examiner Responsibilities
The general purpose of the physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the driver ability to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a "medical fitness for duty" examination.

Regulation: You must perform the described physical examination

The physical examination should be conducted carefully and must, at a minimum, be as thorough as the examination of body systems outlined in the Medical Examination Report form. For each body system, mark "abnormal" if abnormalities are detected, or "normal" if the body system is normal.

You must document abnormal findings on the Medical Examination Report Form, even if not disqualifying. You should indicate whether or not the abnormality affects driving ability or whether any additional evaluation is needed to determine medical fitness for duty.

Determine Certification Status — Medical Examiner Responsibility
The Federal Motor Carrier Safety Administration (FMCSA) relies on you, the medical examiner, to assess and determine if the commercial motor vehicle (CMV) driver meets the physical qualification requirements cited in 49 CFR 391.41. In some cases you will also consider any reports and recommendations from the primary care provider and/or specialists treating the driver to supplement your examination and ensure adequate medical assessment, but as the medical examiner you are ultimately responsible for making the certification decision and for signing the Medical Examination Report Form. You issue a Medical Examiner's Certificate to the driver that you determine to be medically fit for duty.

Your certification decision is limited to the certification and disqualification options printed on the Medical Examination Report form. The maximum time for which you can certify a driver is 2 years. You can certify for a period of time less than 2 years at your discretion.

Certification Status

When you determine that a driver is medically fit to drive and also able to perform non-driving responsibilities, you will certify the driver and issue a Medical Examiner's Certificate.

When you determine that a driver has a health history or condition that does not meet physical qualification standards, you must not certify the driver. You should complete the examination to determine if the driver has more than one disqualifying condition. Some conditions are reversible and the driver may take actions that will enable him/her to meet qualification requirements if treatment is successful.

Discussion Regarding Certification Decision

You should discuss your certification decision with the driver. Ensure that the driver understands the certification decision.

When you:

Certify — discussion may include:

- Reason for periodic monitoring and shortened examination interval
- Additional requirements associated with certification
- Medical Examiner's Certificate expiration information:
    - Occurs at midnight on the expiration date
    - Has no grace period

Disqualify — discussion may include:

- Reason for disqualification
- Steps that can be taken to meet certification standards
- Temporary disqualification
    - Reason (condition or medication).
    - Length of waiting period.
    - Conditions that could restart the waiting period.

Determine Certification Status-Record-keeping Responsibility

Regulation: You must document the driver physical examination

You must record the results of every driver physical examination, substantially in accordance with the Medical Examination Report Form and the instructions cited in 49 CFR 391.43.

Medical Examination Report Form

- You are to retain the driver medical records for a minimum of 3 years
- Medical examiner must retain the original (391.43(i)), but can provide a copy to the driver if requested
- An employer can only be provided a copy with the driver’s consent
- Records need to be available to the entities listed in 391.43(i) which consist of an authorized representative of FMCSA or an authorized Federal, State, or local enforcement agency representative, within 48 hours after request

Medical Examiner's Certificate

- Provide the original to the driver you examined and found medically fit for duty
- You must retain a copy of the driver medical records, including the certificate, for a minimum of 3 years
- You may provide a copy to a prospective or current employer upon request

Certify

As a medical examiner you determine when a driver meets physical qualification requirements. You also determine when the driver must repeat the physical examination for continuous certification. Although you cannot exceed the maximum certification period, you are never required to certify a driver for a certification interval longer than what you deem necessary to adequately monitor driver medical fitness for duty.

Determination pending is an option a medical examiner chooses when more information is needed to make a qualification decision and specify a date, on or before the 45-day expiration date, for the driver for the driver to return to the medical exam office for follow-up. If the disposition of the pending examination is not updated via the National Registry on or before the 45-day expiration date, FMCSA will notify the examining medical examiner and the driver in writing that the examination is no longer valid and that the driver is required to be reexamined.

MER amended: A Medical Examination Report Form (MER), MCSA-5875, may only be amended while in determination pending status for situations where new information (e.g., test results, etc.) has been received or there has been a change in the driver's medical status since the initial examination, but prior to a final qualification determination. Select this option when a Medic- al Examination Report Form, MCSA-5875, is being amended; provide the reason for the amendment, sign and date. In addition, initial and date any changes made on the Medical Examination Report Form, MCSA-5875. A Medical Examination Report Form, MCSA-5875, cannot be amended after an examination has been in determination pending status for more than 45 days or after a final qualification determination has been made. The driver is required to obtain a new physical examination and a new Medical Examination Report Form, MCSA-5875, should be completed.

Certify — Determine Certification Interval Overview

Regulation: Maximum certification 2 years

When your examination finds that the driver meets all physical qualification standards, you can certify the driver for the maximum 2 years.

- Mark the “Meets standards in 49 CFR 391.41; qualifies for 2-year certificate” box
- Verify that the expiration date is 2 years from the date of the physical examination

Qualify — With Periodic Monitoring (less than 2 years)

You may certify for less than 2 years when a need exists to monitor the medical fitness for duty of the driver more frequently. Some of the FMCSA medical guidelines include recommendations for maximum certification intervals 1 year or less. You are never required to certify a driver for a certification interval longer than what you deem necessary to adequately monitor driver medical fitness for duty. You may consider information provided from other specialists but the ultimate decision to certify is yours. The certification period could be longer or shorter based on the medical examiner’s assessment and judgment.

- Mark the “Meets standards, but periodic monitoring required due to__” box
- Specify the reason for periodic monitoring
- Indicate the length of certification by checking 3 or 6 months, 1 year, or other and write in the time frame (e.g., 1 month)

- Calculate the expiration date from the date of the initial physical examination, not a follow-up examination date

Certify - Require Driver to Wear Corrective Lenses and/or Hearing Aid

Maximum certification 2 years with corrective lenses and/or hearing aid

Qualify - With Requirement to Wear Corrective Sensory Perception Device

As a medical examiner you must specify as a requirement for certification that a driver wear corrective lenses and/or a hearing aid when that driver has to use one or both to meet the vision and/or hearing physical qualification requirements.

- Mark the “Wearing corrective lenses” and/or “Wearing hearing aid” option to indicate that the driver must wear the sensory perception correction device while driving.

Certify - Require Driver to Meet Alternate Standard 49 CFR 391.49

Regulation: Maximum certification 2 years when driver must meet alternate standard

Qualify - Skill Performance Evaluation (SPE) Certificate

By marking the SPE option, you certify that the driver:

1. Fails to meet one or more of the limb requirements of 49 CFR 391.41(b)(1) or (2)
2. Meets all other physical requirements cited in 49 CFR 391.41(b)
3. Must have both a valid SPE certificate and Medical Examiner's Certificate to drive

As a medical examiner, you start the SPE program application process by first determining if the driver is otherwise medically qualified. The SPE certificate is issued for 2 years. A copy of the Medical Examination Report form is required with initial and renewal SPE applications.

Certify - Require Driver to Have a Federal Exemption

Regulation: Maximum certification 1 year

Qualify - With a Federal Exemption

There are 3 Federal medical exemption programs for drivers:

- The Vision Exemption Program allows some drivers with monocular vision to drive a CMV.
- The Seizure Exemption Program
- The Hearing Exemption Program

To learn more about the Federal medical exemption programs, visit the end of this hand book or visit https://www.fmcsa.dot.gov/medical/driver-medical-requirements/driver-exemption-programs

As a medical examiner, you start the exemption program application process by first determining if the driver is otherwise medically qualified except for monocular vision. A copy of the Medical Examination Report form is required with both the initial and renewal Federal exemption applications.

By marking “Accompanied by a __ waiver/exemption and writing in the Federal program name, you certify that the driver:

- Fails to meet the monocular vision requirement of 49 CFR 391.41(b)(10) which states the driver must have distant visual acuity of 20/40 (Snellen) in each eye with or without corrective lenses, distant binocular vision of at least of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70 degrees in the horizontal Meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green, and amber

- Meets all other physical requirements cited in 49 CFR 391.41(b)
- Must also have a valid Federal medical exemption certificate to drive

Qualify – By Operation of 49 CFR 391.64

- Applies to a small number of individuals who participated in the FMCSA studies conducted prior to the implementation of the medical exemption programs.
- By checking the “By Operation of 49 CFR 391.64,” option, you certify that the driver:
    - Presented documentation of participation in the initial vision and insulin programs in the early 1990’sContinues to meet 49 CFR 391.64 requirements
    - Is otherwise medically fit for duty

Qualify – Driving Within an Exempt Intracity Zone

- Intracity zones are geographical areas defined in the regulations
- By checking the “Driving within an exempt intracity zone (See 49 CFR 391.62)” option, you certify that the driver:
    - Is otherwise medically fit for duty except for the exempted condition
    - The exempted condition remains stable
    - Remains in medical compliance with the requirements of section 391.62 which was specifically reserved for drivers who participated in a diabetes and vision grandfathering study conducted by FMCSA in 1996

Disqualify

As a medical examiner, you must disqualify the driver who does not meet one or more of 49 CFR 391.41 physical qualification standards. You should complete the physical examination of the driver and discuss with him/her the reason(s) for disqualification and any steps that can be taken to meet certification standards.

Disqualify — Discuss and Document Decision

Regulation: Disqualify driver who does not meet standards

As a medical examiner, you must disqualify the driver who:

- Fails to meet a physical qualification requirement cited in the standards (e.g. vision test result, hearing loss test result, or epilepsy)
- Who has a medical condition that endangers the health and safety of the driver and the public
- Who attempts to deceive the medical examiner (e.g. concealing a fraudulent urine specimen on his/her person prior to taking the urine drug screen)

Disqualify (Does Not Meet Standards)

- Mark the "Does not meet standards" box
- Note the reason for disqualification
- Document the discussion with the driver explaining the rationale for the decision to disqualify which would considered as part of best practices
- Do not issue a medical examiner certificate

Before a disqualified driver can return to commercial motor vehicle (CMV) driving, a medical

examiner must find the driver to be medically fit for duty.

Regulation: Medical examiner issues certificate to medically qualified driver
When you find that the driver examined is medically qualified to operate a commercial motor vehicle (CMV) in accordance with 49 CFR 391.41(b), you should complete a certificate as prescribed in 49 CFR 391.43(h) and furnish the original to the driver. You may provide a copy to a prospective or current employer requesting one.

- Ensure that the name of the driver matches the name on the Medical Examination Report Form.
- Mark any certification requirement that applies:
    - wearing corrective lenses
    - wearing hearing aid
    - accompanied by a __ waiver or exemption
    - driving within an exempt intracity zone (49 CFR 391.62)
    - accompanied by a Skill Performance Evaluation (SPE) Certificate qualified by operation of 49 CFR 391.64

- Write “Federal vision, Federal hearing, and Federal seizure” when exemption certificate is required
- Sign the certificate and complete medical examiner information
- Write the date of the medical examination
- Have the driver sign the certificate and compare this with the information provided by the driver
- Verify that the expiration date does not exceed the certification interval (maximum certification is 2 years)

Cardiovascular Regulation CFR 391.41(b)(4)

Regulation: "A person is physically qualified to drive a commercial motor vehicle (CMV) if that person has no current clinical diagnosis of:

- myocardial infarction
- angina pectoris
- coronary insufficiency
- thrombosis or
- any other cardiovascular disease (CVD) of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure"

Key points to aid a medical examiner’s decision on safe driving ability include

- As the medical examiner, your fundamental obligation during the cardiovascular assessment is to establish whether a driver has a cardiovascular disease or disorder that creates a foundation or increases the risk for sudden death or incapacitation, thus endangering driver and public safety and health.

- The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

- Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions.

Anticoagulant Therapy

Anticoagulant therapy may be utilized in the treatment of cardiovascular or neurological conditions. The certification decision should be based on the underlying medical disease or disorder requiring medication, not the medication itself.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Certain anticoagulants are monitored intermittently with international normalized ratio (INR) and a driver should be stabilized on the medication prior to driving to prevent endangering public safety and the driver's health

Aneurysms, Peripheral Vascular Disease, and Venous Disease and Treatments

- Rupture is the most serious complication of an abdominal aortic aneurysm and is related to the size of the aneurysm
- Deep venous thrombosis can be the source of acute pulmonary emboli or lead to long-term venous complications
- Intermittent claudication is the primary symptom of peripheral vascular disease of the lower extremities

Abdominal Aortic Aneurysm

The majority of abdominal aortic aneurysms (AAAs) occur in the sixth and seventh decades of life and occur more frequently in males than in females by a 3:1 ratio. Smoking is a major risk factor. The majority of AAAs are asymptomatic. Clinical examination identifies approximately 90% of aneurysms greater than 6 cm. Auscultation of an abdominal bruit may indicate the presence of an aneurysm. The risk of rupture increases as the aneurysm increases in size.

An AAA:

- Less than 4 cm rarely ruptures
- 4cm to 5 cm has a 1% to 3% per year rate of rupture
- 5 cm to 6 cm has a 5% to 10% per year rate of rupture
- Greater than 7 cm has approximately a 20% per year rate of rupture
- Monitoring of an aneurysm is advised because the growth rate can vary and rapid expansion can occur
- Ultrasound has almost 100% sensitivity and specificity for detecting an AAA and can monitor changes in size

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Includes a 3-month waiting period for aneurysm repair
- Includes aneurysms less than 4 cm that are asymptomatic and are not considered restrictive
- Includes aneurysms greater than 4 cm but less than 5 cm that are asymptomatic and have cardiovascular clearance should not be considered restrictive

Acute Deep Vein Thrombosis

The commercial driver is at an increased risk for developing acute deep vein thrombosis (DVT) due to long hours of sitting as part of the profession. DVT can be the source of pulmonary emboli that can cause gradual or sudden incapacitation or death. Adequate treatment with anticoagulants decreases the risk of recurrent thrombosis by approximately 80%. As a medical examiner, you must evaluate on a case-by-case basis to determine if the driver meets cardiovascular requirements

Chronic Thrombotic Venous Disease

Chronic thrombotic venous disease of the legs increases the risk of pulmonary emboli; however, there is insufficient research to confirm the level of risk. As a medical examiner, you must evaluate on a case-by-case basis to determine if the driver meets cardiovascular requirements.

Intermittent Claudication

Approximately 7% to 9% of persons with peripheral vascular disease develop intermittent claudication, the primary symptom of obstructive vascular disease of the lower extremity. In cases of severe arterial insufficiency, necrosis, neuropathy, and atrophy may occur. You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate, effective, safe, and stable. You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Other Aneurysms

Aneurysms can develop in visceral and peripheral arteries and venous vessels. Rupture of any of these aneurysms can lead to gradual or sudden incapacitation and death. Much of the information on aortic aneurysms is applicable to aneurysms in other arteries.

Thoracic Aneurysm

While relatively rare, thoracic aneurysms are increasing in frequency. Size of the aorta is considered the major factor in determining risk for dissection or rupture of a thoracic aneurysm.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Post-surgically, 3-months is a reasonable recovery period for aneurysm repair
- Thoracic aneurysms less than 3.5 cm that are asymptomatic should have no driving restrictions

Pulmonary Emboli

Deep vein thrombosis can be one of the sources of pulmonary emboli (PE). PE can cause gradual or sudden incapacitation and is associated with significant morbidity and mortality.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Post-pulmonary embolism, 3-months being asymptomatic recovery period
- Appropriate long term treatment (anticoagulants)
- Having a letter of medical clearance from the treating cardiovascular specialist who understands the functions and demands of commercial driving

Superficial Phlebitis

Although superficial phlebitis is a benign and self-limited disease, deep vein thrombosis (DVT) is often a coexisting condition and needs to be excluded during the course of examination. You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess the driver medical fitness for duty.

Varicose Veins

The presence of varicose veins does not medically disqualify the commercial driver. Varicose veins are usually benign; however, you should consider whether they are associated with any complications that could impact the driver's medical fitness, but limited to, venous insufficiency, leg ulcerations, and recurrent deep vein thrombosis.

Cardiac Arrhythmias and Treatment

The majority of sudden cardiac deaths are thought to be secondary to ventricular tachycardia or ventricular fibrillation and occur most often when there is no prior diagnosis of heart disease.

Implantable Cardioverter---Defibrillators

Implantable cardioverter-defibrillators (ICD) are electronic devices that treat cardiac arrest, ventricular fibrillation, and ventricular tachycardia through the delivery of rapid pacing stimuli or shock therapy.

ICDs treat but do not prevent arrhythmias. Therefore, the driver remains at risk for syncope. The management of the underlying disease is not effective enough for the driver to meet cardiovascular qualification requirements. Combination ICD/pacemaker devices are also ineffective in preventing incapacitating cardiac arrhythmia events.

- Having an ICD or ICD/pacemaker combination device is **disqualifying** in that federal regulation 391.41(b)(4) states that a driver "has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive heart failure.

Pacemakers

A pacemaker is an implantable device designed to treat bradycardia. When assessing the risk for sudden, unexpected incapacitation in a driver with a pacemaker, the underlying disease responsible for the pacemaker indication must be considered.

- Both sinus node dysfunction and atrioventricular (AV) block have variable long-term prognoses, depending on the underlying disease.
- Cerebral hypoperfusion is usually corrected by support of heart rate via the implantation of a pacemaker.

Currently, pacemakers and the lead systems are reliable and durable over the long term.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- For post-pacemaker implantation, consider a 1 month recovery period if the underlying disease is:
  a. Sinus node dysfunction
  b. AV block

- For post-pacemaker implantation, consider a 3-month recovery period if the underlying disease is:
  a. Neurocardiogenic syncope
  b. Hypersensitive carotid sinus with syncope

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- There should be documentation indicating the presence of a functioning pacemaker
- There should be documentation indicating completion of routine pacemaker checks
- Consider medical from a cardiovascular specialist
- As a medical examiner, you must evaluate on a case-by-case basis to determine if the driver meets cardiovascular requirements

Supraventricular Arrhythmias
Supraventricular arrhythmias fall into two main categories: supraventricular tachycardia (SVT) and atrial fibrillation.

Supraventricular Tachycardia (SVT)
SVT is a common arrhythmia that is usually not considered a risk for sudden death. On occasion, SVT can cause loss of consciousness or compromise cerebral function. Treatment by catheter ablation is usually curative and allows drug therapy to be withdrawn.

Atrial Fibrillation
The major risk associated with atrial fibrillation is the presence of an embolus which can cause a stroke. Anticoagulant therapy decreases the risk of peripheral embolization in individuals with risk factors for stroke.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver should be anticoagulated adequately to decrease stroke risk
- The driver should be asymptomatic with a controlled heart rate
- For ablations related to atrial fibrillations, atrioventricular nodal reentrant tachycardia, Wolff-Parkinson-White syndrome, atrial tachycardia and junctional tachycardia, one should have an appropriate recovery period
- Consider medical clearance from the treating medical provider

Ventricular Arrhythmias
Ventricular arrhythmias are categorized as ventricular fibrillation and ventricular tachycardia and are responsible for the majority of instances of cardiac sudden death. Most cases are caused by coronary heart disease, but can also occur in people with hearts that are structurally normal.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- After treatment with drugs or other therapy, a one month recovery period should be considered for right ventricular outflow ventricular tachycardia and idiopathic left ventricular tachycardia
- The driver should be asymptomatic and have an identified non-disqualifying cause
- The driver should not have sustained ventricular tachycardia
- The left ventricular ejection fraction (LVEF) should be greater or equal to 0.40 or 40% based on best practices
- Consider medical clearance from a cardiovascular specialist or the treating medical provider

Cardiovascular Tests for Educational Purposes

Detection of an undiagnosed heart or vascular finding during a physical examination may indicate the need for further testing and examination to adequately assess medical fitness for duty. Diagnostic-specific testing may be required to detect the presence and/or severity of cardiovascular diseases. The additional testing may be requested by the medical examiner from the primary care physician, cardiologist, or cardiovascular surgeon.

Types of cardiovascular tests include**:**

- Echocardiography- Left ventricular ejection fraction (LVEF) may be assessed by echocardiography. Imaging studies have superior sensitivity and specificity compared to the

standard exercise tolerance test (ETT) and are indicated in the presence of an abnormal resting electrocardiogram or non-diagnostic standard ETT. Based on best practices methodology, a driver should have an LVEF greater or equal to 40% with no associated pulmonary hypertension

- Exercise Tolerance Test (ETT)- The exercise tolerance test is the most common test used to evaluate workload capacity and detect cardiac abnormalities. Based on best practices methodology, a driver should be able to exercise to a workload capacity greater than 6 Metabolic Equivalents (METs) (through Bruce protocol stage II or equivalent) along with attaining a heart rate greater than or equal to 85% of predicted maximum (unless on beta blockers), have a rise in systolic blood pressure greater than or equal to 20 mm HG without angina, and have no significant ST segment depression

Coronary Heart Diseases and Treatments

As a medical examiner, it is your decision whether the nature and severity of the condition of the driver will result in gradual or sudden incapacitation. The major clinical manifestations of coronary heart disease (CHD) are acute myocardial infarction, angina pectoris (either stable or unstable), congestive heart failure, and sudden death.

Prognostic indicators for CHD

The major predictor of CHD is left ventricular function. Other indicators to be considered include:

- General health
- Age
- Arrhythmias
- Angina pectoris
- Associated vascular disease
- Severity of CHD

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Consider securing medical clearance from a cardiovascular specialist who understands the functions and demands of commercial driving. As a medical examiner, you must evaluate on a case-by-case basis to determine if a driver meets cardiovascular requirements

- The driver being able to tolerate cardiovascular medication and be knowledgeable about medications used while driving and be free from side effects that compromise driving ability, and demonstrate compliancy with the ongoing treatment plan

Acute Myocardial Infarction

The first few months following an acute myocardial infarction (MI) pose the greatest risk of mortality, with the majority of deaths classified as sudden death. Current opinion among clinicians state that post-MI drivers may safely return to any occupational task provided there is no exercise-induced myocardial ischemia or left ventricular dysfunction.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Status/post myocardial infarction, consider a recovery period of 2 months based on best practices if the driver is asymptomatic, has no electrocardiogram ischemic changes and tolerates medications
- Consider medical clearance from a cardiovascular specialist

Angina Pectoris

When evaluating the driver with angina, you should distinguish between stable and unstable angina. The presence of unstable angina may be a precursor to a cardiovascular episode known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.

Stable angina

May be precipitated by a predictable pattern, including:

- Exertion
- Emotion
- Extremes in weather
- Sexual activity

Unstable angina

Has an unpredictable course characterized by:

- Pain occurring at rest.
- Changes in pattern (i.e., increased frequency and longer duration).
- Decreased response to medication.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A reasonable recovery period would be 3 months with no angina at rest or change in angina pattern
- Driver is asymptomatic
- The driver tolerates medications
- The driver should have a satisfactory exercise tolerance test (ETT) and consider an evaluation from a cardiovascular specialist

Coronary Artery Bypass Grafting

Coronary artery bypass grafting (CABG) surgery is frequently the preferred choice of therapy for individuals with multi-vessel coronary heart disease, narrowing of the proximal left main coronary artery, and extensive atherosclerosis in the presence of left ventricular dysfunction or debilitating angina.

Following CABG surgery, individuals are at less risk of sudden death than those who are treated medically. Most drivers who undergo CABG surgery are able to return to work. A longer waiting period is recommended to allow sternal incision healing. The sternum should be completely healed before certifying a driver. A significant risk associated with CABG surgery is the high long-term reocclusion rate of the bypass graft.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver should have a reasonable recovery period of 3 months
- Having a healed sternum
- Being asymptomatic and tolerating cardiovascular medications with no orthostatic symptoms
- Having been examined and approved by a cardiologist for medical fitness to drive
- At 5 years post-CABG surgery because of the risk of reocclusion over time, it would be reasonable for the driver to obtain an annual exercise test or an imaging stress test, if indicated

Heart Failure

Coronary artery disease is considered as a primary cause of heart failure. It is a progressive disease that results from damaged muscles of the heart that affect their blood pumping action. This reduces the blood supplied throughout the body, leading to fatigue, shortness of breath, reduced physical activity, and swelling of the ankles or legs.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver should be asymptomatic
- The driver should tolerate cardiovascular medications with no orthostatic symptoms
- The driver has a left ventricular ejection fraction (LVEF) greater than or equal to 40%
- Is examined and approved by a cardiologist for medical fitness to drive

Percutaneous Coronary Intervention

Percutaneous Coronary Intervention (PCI) was formerly known as angioplasty with a stent. It is a nonsurgical procedure that uses a catheter to place a stent to open up blood vessels that have been narrowed by plaque buildup (atherosclerosis). PCI improves blood flow, this decreasing heart-related chest pain. Complications are uncommon, but if they do occur they are usually acute complications at the vascular access site.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A one week recovery period is reasonable to assure that no acute complication occurs at the vascular access site
- Having no injury to the vascular access site
- Individuals with stents should have an exercise tolerance test (ETT) every other year

Congenital Heart Disease

Heart failure and sudden death are the major causes of death among individuals with congenital heart disease. Due to the complexity of these problems, the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Drivers recommend that the driver has regular, ongoing follow- up by a cardiologist knowledgeable in adult congenital heart disease.

The driver with congenital heart disease must meet the qualification standards. As a medical examiner, your decision to certify should be based on:

- Anatomic diagnosis
- Severity of the congenital defect
- Results of treatment
- Present fitness status
- Risk of sudden death or incapacitation

Ebstein Anomaly

Ebstein anomaly is a congenital downward displacement of the tricuspid valve. The natural history of the patient with Ebstein anomaly depends on its severity. Adults with a mild form of Ebstein anomaly can remain asymptomatic throughout their lives.

Key points to aid a medical examiner's decision on safe driving ability include

- If the driver is asymptomatic
- If the driver has a mild tricuspid anomaly
- If the driver has mild cardiac enlargement
- If the driver has mild right ventricular dysfunction
- Consider a recent evaluation by a cardiologist knowledgeable in adult congenital heart disease and who understands the functions and demands of commercial driving.
- Based on best practices, moderate or severe anomaly, intracardiac lesion, shunts, symptomatic arrhythmias, and accessory conduction pathways increase risk and should not be approved for driving

Heart Transplantation

The major-medical concern for certification of a commercial driver heart recipient are transplant rejection and post-transplant atherosclerosis.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A recovery period of one year would be reasonable if the driver is asymptomatic, tolerates medications and has no signs of rejection
- Should have medical clearance from a cardiovascular specialist who understands the functions and demands of commercial driving

Hypertension

See the Hypertension section of this handbook.

Myocardial Disease

Myocardial diseases are often progressive and require long-term follow-up. Even so, improved diagnostic testing and treatment can increase the number of drivers with myocardial disease who seek commercial motor vehicle driver certification.

Hypertrophic Cardiomyopathy

Hypertrophic cardiomyopathy is a complex disease characterized by marked morphologic, genetic, and prognostic heterogeneity. Some individuals experience a benign and stable clinical course, while in others the disease is characterized by progressive symptoms. For some individuals, sudden death is the first definitive manifestation of the disease. The confirmed diagnosis of hypertrophic cardiomyopathy is disqualifying in that federal regulation 391.41(b)(4) states that a driver "has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive heart failure

Restrictive Cardiomyopathy

The Mayo Clinic performed a study on idiopathic restrictive cardiomyopathy between 1979 and 1996. The Clinical Profile and Outcome of Idiopathic Restrictive Cardiomyopathy report indicated a 5-year survival rate of only 64%, compared with an expected survival rate of 85%. A confirmed diagnosis of restrictive cardiomyopathy is disqualifying in that federal regulation 391.41(b)(4) states that a driver "has

no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive heart failure.

Syncope

Syncope is a symptom, not a medical condition, that can present an immediate threat to public safety when causing the driver of a commercial motor vehicle to lose control of the vehicle.

As a medical examiner, you should ensure that:

- Diagnosis distinguishes between pre-syncope (i.e., dizziness, lightheadedness) and true syncope (i.e., loss of consciousness)
- The medications used by the driver do not predispose the driver to precipitous declines in blood pressure, syncope, fatigue, or electrolyte shifts and imbalances
- Cardiac-based syncope is differentiated from other causes of syncope
- Other forms of syncope, such as neurological-based conditions (e.g., migraine headache, seizures) are adequately evaluated

You may refer to the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers for diagnosis-specific recommendations.

You may refer the driver for further testing to determine the cause of syncope and obtain a medical clearance letter from a cardiovascular specialist.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver has been treated for symptomatic disease and is now asymptomatic
- The driver's tolerance of medications
- The driver is at low risk for syncope/near syncope
- The driver has clearance from an appropriate specialist (e.g., cardiologist, neurologist) who understands the functions and demands of commercial driving

Valvular Heart Diseases and Treatments

Murmurs are a common sign of valvular heart conditions; however the presence of a murmur may be associated with other cardiovascular conditions. As a medical examiner, you must distinguish between functional murmurs and pathological murmurs that are medically disqualifying.

Classification of Murmur Severity

The intensity of murmurs is classified on a scale of I to VI, from the least pronounced murmur to the loudest. Classification is rated as follows:

- Grade I – Must strain to hear a murmur
- Grade II – Can hear a faint murmur without straining
- Grade III – Can easily hear a moderately loud murmur
- Grade IV – Can easily hear a moderately loud murmur that has a thrill
- Grade V – Can hear the murmur when only part of the stethoscope is in contact with the skin
- Grade VI – Can hear the murmur with the stethoscope close to the skin; it does not have to be in contact with the skin to detect the murmur

Murmurs that are:

- Systolic and grade I or II are usually benign if the driver has no signs or symptoms of heart disease
- Mid-systolic are usually benign if the driver has no signs or symptoms of heart disease

Aortic Regurgitation

Aortic regurgitation is usually a chronic condition characterized by a prolonged asymptomatic phase and gradual left ventricular (LV) dilatation. Other conditions such as infective endocarditis and aortic dissection can result in acute severe aortic regurgitation. Medical examiners should evaluate case-by-case. Medical examiners should use parameters for aortic regurgitation include the severity of the diagnosis, LV size, and the presence of signs or symptoms.

Mild or moderate aortic regurgitation occurs in the presence of normal LV systolic function and little or no LV enlargement.

Severe aortic regurgitation occurs with a normal LV systolic function but significant LV dilatation.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- If the aortic regurgitation is mild and asymptomatic
- If the aortic regurgitation is moderate with normal LV function, or mild LV enlargement, and the driver is asymptomatic
- If the driver has a medical clearance letter from a cardiovascular specialist who understands the functions and demands of commercial driving
- If certified with mild or moderate aortic regurgitation, echocardiography every 2 years would be feasible to detect any changes

Severe Aortic Regurgitation

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Post-aortic valve repair should have a 3-month recovery period
- The driver being asymptomatic
- The driver having a medical clearance letter from a cardiovascular specialist who understands the functions and demands of commercial driving
- Normal left ventricular (LV) function
- LV dilatation:
    - LV end-diastolic dimension (LVEDD) less than or equal to 60 mm
    - LV end-systolic dimension (LVESD) less than or equal to 50 mm
- Best practices has suggested repeat echocardiograms every 6 to 12 months if LVEDD less than 60mm or LVESD less than 50 mm and every 4 to 6 months if LVEDD equal to 60mm or LVESD equal to 50 mm

Aortic Stenosis

The most common cause of aortic stenosis in adults is a degenerative process associated with many of the risk factors underlying atherosclerosis. Aortic stenosis may cause a heart murmur.

Medical examiners should evaluate case-by-case and use parameters for aortic stenosis include the severity of the diagnosis and the presence of signs or symptoms.
Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A 3-month recovery period is reasonable if the driver is post-surgical
- A driver with mild aortic stenosis that is asymptomatic
- A driver with moderate aortic stenosis that is asymptomatic and the driver has no disqualifying findings and/or conditions (i.e. angina, heart failure, atrial fibrillation, LV ejection fraction under 40%, thromboembolism)
- A driver with severe aortic stenosis that has been surgically repaired and meets all aortic valve repair surgical guidelines
- A driver should have medical clearance letter from a cardiovascular specialist
- A useful tool to track progression of the disease is for the driver to undergo surveillance with echocardiography every 5 years for mild aortic stenosis and every year for moderate aortic stenosis

Aortic Valve Repair

Aortic valve repair is a technique for repairing the existing aortic valve and usually does not require anticoagulant therapy.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver meeting asymptomatic aortic stenosis or aortic regurgitation qualification requirements
- The driver should have medical clearance from a cardiovascular specialist

Mitral Regurgitation

Recommendation parameters for mitral regurgitation include the severity of the diagnosis and the presence of signs or symptoms. The development of symptoms, especially dyspnea, fatigue, orthopnea, and/or paroxysmal nocturnal dyspnea, is a marker of a poor prognosis, including an inability to perform driver tasks and increased risk for sudden cardiac death.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Post-surgery, a driver should have a recovery period of 3 months
- Mild or moderate mitral regurgitation if asymptomatic, normal left ventricular (LV) size and function, normal pulmonary artery pressure should not preclude certification
- Severe mitral regurgitation that is asymptomatic should not preclude certification
- Surgical mitral valve repair for mitral regurgitation, is asymptomatic, and has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving should not preclude certification
- Moderate mitral regurgitation should have an annual echocardiography
- Severe mitral regurgitation should have an exercise tolerance test and echocardiography every 6 to 12 months to assess his ability to drive a CMV safely

Mitral Stenosis

Recommendations for mitral stenosis are based on valve area size and the presence of signs or symptoms. Inquire about episodes of angina or syncope, fatigue, and the ability to perform tasks that require exertion. Treatment options for mitral stenosis include enlarging the mitral valve or cutting the band of mitral fibers.

Key points to aid a medical examiner's decision on safe driving ability include using best practice

methodology through experience and research to ensure driver and public safety:

- Mitral stenosis repair with a post-percutaneous balloon mitral valvotomy should have a 4-week recovery period
- Mitral stenosis repair with a post-surgical commissurotomy (open heart surgery) should have a 3-month recovery period
- The driver should have clearance from a cardiovascular specialist who understands the functions and demands of commercial driving
- Mild mitral stenosis that is asymptomatic should be certified
- Moderate mitral stenosis that is asymptomatic should be certified

Mitral Valve Prolapse

The natural history of mitral valve prolapse is extremely variable and depends on the extent of myxomatous degeneration, the degree of mitral regurgitation, and association with other conditions.

Mitral valve prolapse is usually a benign condition. In some cases, mitral regurgitation may be progressive, resulting in left ventricular (LV) and left atrial enlargement, atrial fibrillation, and congestive heart failure. As the medical examiner, you must assess that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Prosthetic Valves

Prosthetic valves can be mechanical or biological. There are a wide range of reported complications depending upon the variable methods of reporting, the make and model of the prosthesis, the site of implantation, comorbidities, and underlying left ventricular (LV) function, among other causes.

The clinical course is heavily influenced by factors other than valve-related complications, for example, LV dysfunction, congestive heart failure, progression of disease in other valves, coronary disease, or pulmonary hypertension.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- After a valve replacement, the driver should have a recovery period of 3 months, be asymptomatic and have clearance from a cardiovascular specialist who understands the functions and demands of commercial driving

Pulmonary Valve Stenosis

Pulmonary valve stenosis is usually a well-tolerated cardiac lesion normally exhibiting a gradual progression. Gradual or sudden incapacitation may, however, occur in certain circumstances.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Post-balloon valvotomy, a driver should have a 1 month recovery period and be asymptomatic
- Post-surgical valvotomy, a driver should have a 3-month recovery period and be asymptomatic
- Mild or moderate pulmonary valve stenosis should be certified
- A medical clearance letter from a cardiovascular specialist should be obtained

As a medical examiner, you must assess that the nature and severity of the medical condition does not endanger the health and safety of the driver and the public.

Respiratory 49 CFR 391.4 (b)(5)

Regulation: "A person is physically qualified to drive a commercial motor vehicle if that person has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his/her ability to control and drive a commercial motor vehicle safely."

The commercial driver spends more time driving than the average individual. Driving is a repetitive and monotonous activity that demands the driver be alert at all times. Symptoms of respiratory dysfunction or disease can be debilitating and can interfere with the ability to remain attentive to driving conditions and to perform heavy exertion. Even the slightest impairment in respiratory function under emergency conditions (when greater oxygen supply may be necessary for performance) can be detrimental to safe driving.

There are many primary and secondary respiratory conditions that interfere with oxygen exchange and may result in gradual or sudden incapacitation including but not limited to:

- Asthma
- Carcinoma
- Chronic bronchitis
- Emphysema
- Obstructive sleep apnea
- Tuberculosis

In addition, medications used to treat respiratory conditions, both prescription and those available without a prescription, may cause cognitive difficulties, compound the risk for excessive daytime sleepiness (EDS), or cause other forms of incapacitation.

Antihistamine Therapy

Both prescription and over-the-counter antihistamines are used to treat respiratory tract congestion.

First generation antihistamines have sedating side effects that may occur without the driver being aware. Many first generation antihistamines are available without prescription.

Second generation antihistamines have less incidence of sedating side effects and most do not interfere with driving. Some are available without prescription.

Key points to aid a medical examiner’s decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- As the medical examiner, you need to assess that the treatment with antihistamines does not endanger the health and safety of the driver and public knowing that the majority of antihistamines can affect an individual for 12 hours

- Allergic rhinitis, which involves inflammation of the nasal portion of the upper respiratory tract, should rarely render the driver medically unqualified for commercial driving. The symptoms should be treated with non-sedating antihistamines or with local steroid sprays that do not interfere with driving ability

- Making sure that the driver doesn’t have complications and/or treatment that impairs function such as severe conjunctivitis affecting vision, inability to keep eyes open, photophobia, uncontrolled sneezing fits, or sinusitis associated with severe headaches

Allergy-related Life-threatening Conditions

These conditions encompass systemic anaphylaxis and acute upper airway obstruction induced by allergens, genetic deficiencies, or unknown mechanisms, including:

- Stinging insect allergy that may result in acute anaphylaxis following a sting. Preventive measures include carrying an epinephrine injection device in the truck cab and evaluating the driver for immunotherapy
- Hereditary or acquired angioedema due to deficiency of a serum protein controlling complement function that may result in an acute, life-threatening airway obstruction or severe abdominal pain requiring urgent medical attention. Prevention and control can and should be accomplished with appropriate prophylactic medication
- Acute recurrent episodes of idiopathic anaphylaxis or angioedema that may occur unpredictably in some individuals and lead to sudden onset of severe dyspnea, visual disturbance, loss of consciousness, or collapse. Similar episodes occur due to known allergens, including medications, which ordinarily can be avoided

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Individuals with a history of an allergy-related life-threatening condition should have undertaken successful preventive measures and/or treatment without adverse effects before the driver can be considered medically qualified
- As the medical examiner, you must assess whether the nature and severity of the medical condition and the prevention and treatment regimen do not endanger the health and safety of the driver and the public

Asthma

Asthma is a common disease. Individuals with asthma generally exhibit reversible airway obstruction that can be treated effectively with pharmaceutical agents such as bronchodilators and corticosteroids; however, asthma ranges in severity from essentially asymptomatic to potentially fatal.

In some drivers, complications of asthma and/or side effects of therapy may interfere with safe driving. You are responsible on a case-by-case basis for ensuring that the driver is medically fit for duty.

Hypersensitivity Pneumonitis

Hypersensitivity pneumonitis is an immune-mediated granulomatous interstitial pneumonitis that may present as an acute recurrent, subacute, or chronic illness variously manifested by dyspnea, cough, and fever. The condition may not prevent an individual from qualifying for commercial driving; however, the driver with this condition requires medical care to alleviate symptoms of dyspnea, cough, and fever. Also, the driver should avoid exposure to the causative agent (e.g., transporting the agent) because severe respiratory impairment could occur with repeated exposure.

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is not a single disease, but a group of medical conditions characterized by chronic reduction of maximal expiratory flow most often caused by:

- Chronic bronchitis
- Emphysema

Most drivers with COPD have a combination of chronic bronchitis and emphysema. COPD has an insidious onset. The driver may have substantial reduction in lung function prior to developing dyspnea on exertion. The cardinal symptoms are:

- Chronic cough
- Sputum production
- Dyspnea on exertion

As the disease progresses, these symptoms can become incapacitating. In the majority of cases, cigarette smoking is a primary etiologic factor.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- As the medical examiner, you should assess whether the nature and severity of the medical condition (COPD) is stable and does not endanger the health and safety of the driver and the public
- Assess whether the driver has an unstable medical condition such as chronic respiratory failure, history of continuing cough with cough syncope, or hypoxemia at rest (if capillary refill is > 2 seconds)

Sleep Apnea

49 CFR 391.41(b)(5) requires that an individual must have no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with the ability to safely drive a CMV interstate commerce. The Medical Advisory Criteria (Appendix A to Part 391 Section E), identifies sleep apnea as one of several respiratory dysfunctions that may be detrimental to safe driving as this condition may interfere with driver alertness and may cause gradual or sudden incapacitation.

FMCSA reminds medical examiners that the Agency has no rules or regulatory guidance or criteria specifically on OSA screening, testing, and treatment beyond the existing requirements in 49 CFR 391.41(b)(5) and the 2000 medical advisory criteria which is not mandatory. The Agency relies on the use of sound screening approaches by certified medical examiners to identify which individuals are at greater risk for OSA and to refer only those individuals for diagnostic testing. In screening for OSA during the medical certification process, medical examiners may rely on their medical judgment and may consider relevant medical best practices, and expert recommendations. Medical examiners may confer with treating specialists, and request additional and current information to inform their medical certification determinations. FMCSA urges medical examiners educate CMV drivers regarding their risk factors and the health and safety impact of moderate to severe OSA during the medical certification process to explain clearly to drivers the basis for their medical certification decisions.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Symptoms associated with sleep apnea include but are not limited to:
    - Loud snoring
    - Episodes of stopping to breath during sleep
    - Gasping for air during sleep
    - Awakening with a dry mouth
    - Morning headache
    - Insomnia
    - Excessive daytime sleepiness
    - Difficulty paying attention while awake
    - irritability
- Are there multiple risk factors? A high BMI by itself may not be sufficient to order a sleep study
- Risk factors include:
    - Hypertension (treated or untreated)

    - Type 2 diabetes (treated or untreated)
    - History of stroke, coronary artery disease, or arrhythmias
    - Rheumatoid Arthritis
    - Hypothyroidism (untreated)
    - Micrognathia or retrognathia
    - Loud Snoring
    - Small airway (Mallampati Classification of Class III or IV)
    - Neck size > 17 inches (male), >15.5 inches (female)
    - Age > 42 or male or post-menopausal female
    - BMI of 33 and above
- A medical examiner may certify a driver with an OSA diagnosis if the driver is being treated effectively
- A driver determined to be at risk for OSA may be certified for 90 days pending sleep study and treatment (if diagnosed with OSA) at the medical examiner's discretion
- To requalify, drivers must show effective treatment and compliance. Use of APAP for a minimum of 4 hours per night with 70% nightly usage is a recommended standard from the Medical Review Board. Trucking companies have the option of using their own standards.

Infectious Respiratory Diseases

Acute Infectious Diseases

For illnesses, such as the influenza or bronchitis, the driver should:

- Undergo proper treatment for the illness
- Abstain from driving a vehicle for at least 12 hours after taking sedating medications
- Avoid operating a vehicle during the time that the disease is contagious

Many of these conditions are of short duration and proper treatment for the illness must be completed for return-to-work.

Atypical Tuberculosis

Atypical tuberculosis (TB) covers the same broad spectrum of symptoms and disability as TB. Many individuals are colonized, but not infected with atypical organisms, usually Mycobacterium avium - intracellulare. The broad group of atypical Mycobacteria are considered noninfectious and do not pose the problem of contagion. The major issue to be determined is the amount of disease the individual has and the extent of the symptoms. Many cases of Mycobacteria cause very few symptoms. The X-ray findings are often migratory and are associated with cough, mild hemoptysis, and sputum production.

Atypical TB is not generally treated with medication; however, if the driver is using medication, you should assess for side effects that interfere with driving ability.

The certification considerations include, but are not limited to, the amount of disease the driver has experienced and the severity of the symptoms. The potential risk is that if the disease is progressive, respiratory insufficiency may develop.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- You should assess the driver to confirm the etiology and treatment
- Medical examiners should consider whether consultation with the primary care provider or specialist is necessary to provide additional information about the driver's atypical tuberculosis to assist in the qualification determination

Pulmonary Tuberculosis

Although modem therapy has been extremely successful in controlling this disease, pulmonary tuberculosis (TB) persists in some individuals while on therapy or in individuals who are noncompliant with therapy. Advanced TB may cause respiratory insufficiency; however, risk of recurrence after adequate therapy is low.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- You should assess the driver to confirm the etiology and treatment
- You should determine that the driver is compliant with his medications and is not contagious
- Medical clearance from the treating physician should be obtained

Non-infectious Respiratory Diseases

This category includes a number of diseases that cause significant long-term structural changes in the lungs and/or thorax and, therefore, interfere with the functioning of the lungs. Obvious difficulty breathing in a resting position is an indicator for additional pulmonary testing. Certification is determined by clinical evaluation.

Chest Wall Deformities

Acute or chronic chest wall deformities may affect the mechanics of breathing with an abnormal vital capacity as the predominant abnormality. Examples of these disorders include kyphosis, kyphoscoliosis, pectus excavatum, ankylosing spondylitis, massive obesity, and recent thoracic/upper abdominal surgery or injury. The driver certified with a chest wall deformity should have airway function that is not likely to interfere with his or her ability to control and drive a CMV safely.

No specific medication exists for treatment of this category. However, individuals may be particularly sensitive to the side effects of alcohol, antidepressants, and sleeping medications, even in small doses.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- As the medical examiner, you should assess whether the nature and severity of the medical condition (chest wall deformities) is stable and does not endanger the health and safety of the driver and the public
- Assess whether the driver has an unstable medical condition such as chronic respiratory failure, history of continuing cough with cough syncope, or hypoxemia at rest (if capillary refill is > 2 seconds)

Cystic Fibrosis

Until recently, few individuals with cystic fibrosis (CF) lived into adulthood, but with modern therapy the number of survivors continues to increase. Treatment for CF may require almost continuous antibiotic therapy and daily respiratory therapy to mobilize abnormal secretions. Chronic debilitating illness may result in limited physical strength. Some individuals have a mild form of the disease that may not be diagnosed until early adulthood.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Individuals should be evaluated as to the extent of their disease and symptoms and ability to obtain therapy while working

- Medical clearance from the treating physician should be obtained

Interstitial Lung Disease

The interstitial lung diseases (ILDs) are a heterogeneous group of diseases classified together because of common clinical X-ray, physiologic, and pathologic features. Occupational and environmental exposures are common causes of ILDs.

A history of breathlessness while driving, walking short distances, climbing stairs, handling cargo or equipment, and entering or exiting the cab or cargo space should initiate a careful evaluation of pulmonary function for any disqualifying secondary conditions.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- As the medical examiner, you should assess whether the nature and severity of the medical condition (ILD) is stable and does not endanger the health and safety of the driver and the public
- Assess whether the driver has an unstable medical condition such as chronic respiratory failure, history of continuing cough with cough syncope, or hypoxemia at rest (if capillary refill is > 2 seconds)

Pneumothorax

Pneumothorax (air in the pleural space) may follow trauma to the chest or may occur spontaneously.

Traumatic Pneumothorax - A medical history and physical examination will provide the details of the event but may not help to ascertain recovery. Complete recovery should be confirmed by chest X-rays performed by the treating physician.

Spontaneous Pneumothorax - If spontaneous pneumothorax complicates an existing lung disease (e.g., emphysema), then the underlying lung disease will determine the chance of a recurrent pneumothorax and the certification outcome. Chest X-rays performed by the treating physician (especially views in deep inspiration and full expiration) will confirm the resolution of air from the pleural space but may show some residual pleural scarring or apical blebs or bullae.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assessing the driver as asymptomatic without chest pain or shortness of breath
- The driver having no disqualifying underlying lung disease
- Having confirmed resolution of the single spontaneous pneumothorax
- Medical clearance from the treating physician would offer support

Secondary Respiratory Conditions and Underlying Disorders

Cor Pulmonale

Cor pulmonale refers to enlargement of the right ventricle secondary to disorders affecting lung structure or function.

The major risks are:

- Dizziness
- Hypotension

- Syncope
- Common side effects of vasodilators that may interfere with driving

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assess the potential side effects to make certain that they do not endanger the health and safety of the driver and the public
- Medical clearance from the treating physician should be obtained
- Assessing the side effects of vasodilators

Rheumatic, Arthritic, Orthopedic, Muscular, Neuromuscular or Vascular Disease 49 CFR 391.41(b)(7)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his/her ability to control and operate a commercial motor vehicle safely."

Certain diseases are known to have acute episodes of transient muscle weakness, poor muscular coordination (ataxia), abnormal sensations (paresthesia), decreased muscular tone (hypotonia), visual disturbances and pain which may be suddenly incapacitating. With each recurring episode, these symptoms may become more pronounced and remain for longer periods of time. Other diseases have more insidious onsets and display symptoms of muscle wasting (atrophy), swelling and paresthesia which may not suddenly incapacitate a person but may restrict his/her movements and eventually interfere with the ability to safely operate a motor vehicle. In many instances these diseases are degenerative in nature or may result in deterioration of the involved area.

Once the individual has been diagnosed as having a rheumatic, arthritic, orthopedic, muscular, neuromuscular or vascular disease, then he/she has an established history of that disease. The medical examiner, when examining an individual, should consider the following: The nature and severity of the individual's condition (such as sensory loss or loss of strength); the degree of limitation present (such as range of motion); the likelihood of progressive limitation (not always present initially but may manifest itself over time); and the likelihood of sudden incapacitation. If severe functional impairment exists, the driver does not qualify. In cases where more frequent monitoring is required, a certificate for a shorter period of time may be issued.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assessment of physical findings such as, but not limited to, equilibrium, coordination, speech patterns, sensory and positional abnormalities, joint abnormalities, muscle wasting, range of motion issues, loss of strength and ataxia

Seizures

Epilepsy 49 CFR 391.41(b)(8)

Regulation: "A person is physically qualified to drive a commercial motor vehicle if that person — Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability control a commercial vehicle".

The advisory criteria for 49 CFR 391.41(b)(8) says, "Epilepsy is a chronic functional disease characterized by seizures or episodes that occur without warning, resulting in loss of voluntary control which may lead to loss of consciousness and/or seizures. Therefore, the following drivers cannot be qualified: (i) a driver who has a medical history of epilepsy; (ii) a driver who has a current clinical diagnosis of epilepsy; or (iii) a driver who is taking antiseizure medication."

If an individual has had a sudden episode of a **nonepileptic seizure** or **loss of consciousness of unknown cause which did not require antiseizure medication**, the decision as to whether that person's condition will likely cause loss of consciousness or loss of ability to control a motor vehicle is made on an individual basis by the medical examiner in consultation with the treating physician. Before certification is considered, it is suggested that a 6 month waiting period elapse from the time of the episode. Following the waiting period, it is suggested that the individual have a complete neurological examination. If the results of the examination are negative and antiseizure medication is not required, then the driver may be qualified.

In those individual cases where a driver has a seizure or an episode of loss of consciousness that resulted from a known medical condition (e.g., drug reaction, high temperature, acute infectious disease, dehydration or acute metabolic disturbance), certification should be deferred until the driver has fully recovered from that condition and has no existing residual complications, and not taking antiseizure medication.

Any driver who has had a seizure may be eligible for an exemption from the regulation and should consult the criteria for an exemption.

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/driver-medical-requirements/69956/federal-seizure-exemption-application.pdf

Key points to aid a medical examiner’s decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Per the advisory criteria, assessing if the driver has completed a waiting period off anticonvulsant medication and seizure free for 10 years and you, as the medical examiner, believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public
- You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess a driver’s medical fitness for duty if the driver has been off anticonvulsant medications and seizure free for 10 years

Acute Seizures — Structural Insult to the Brain

Individuals may have a seizure at the time of a brain insult. Most neurological conditions in which early seizures may occur are also risk factors for later unprovoked seizures. The occurrence of early seizures adds a significant increment of risk for later epilepsy to that associated with the primary condition. The risk for subsequent unprovoked seizures is greatest in the first 2 years following the acute insult.

Individuals suffering an occlusive cerebrovascular insult resulting in a fixed neurological deficit will experience a seizure at the time of the insult. Unprovoked seizures can occur within the next 5 years in individuals with an occlusive vascular insult.

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures.

Key points to aid a medical examiner’s decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Being seizure free for the entire waiting period

- Being offf anticonvulsant medication prescribed for control of seizures.
- For those individuals who survive severe head injury, the risk for developing unprovoked seizures does not decrease significantly over time
- A waiting period of a minimum of 1 year is reasonable for a mild insult without early seizures, stroke without risk for seizures, and an intracerebral or subarachnoid hemorrhage without risk for seizures
- A waiting period of a minimum of 2 years is reasonable for a moderate insult without early seizures or a mild insult with early seizures
- A waiting period of a minimum of 5 years is reasonable for a moderate insult with early seizures, stroke with risk for seizures, or an intracerebral or subarachnoid hemorrhage with risk for seizures
- The medical examiner should consider whether consultation with the primary care provider or specialist is necessary to provide additional information about the driver's seizure to assist in the qualification determination

Acute Seizures — Systemic Metabolic Illness

Seizures are the normal reaction of a properly functioning nervous system to adverse events. In the presence of systemic metabolic illness, seizures are generally related to the consequences of a general systemic alteration of biochemical homeostasis and are not known to be associated with any inherent tendency to have further seizures. The risk for recurrence of seizures is related to the likelihood of recurrence of the inciting condition.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assessing if the underlying systemic metabolic dysfunction has been corrected
- Assessing the risk of recurrence
- The medical examiner should consider whether consultation with the primary care provider or specialist is necessary to provide additional information about the driver's seizure to assist in the qualification determination

Single Unprovoked Seizure

An unprovoked seizure occurs in the absence of an identifiable acute alteration of systemic metabolic function or acute insult to the structural integrity of the brain. There may be a known or unknown cause of the seizure.

While individuals who experience a single unprovoked seizure do not have a diagnosis of epilepsy, they are clearly at a higher risk for having further seizures. The overall rate occurrence is within the first 5 years following the seizure.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- The driver should be seizure free and off anticonvulsant medication for at least 5 years for an initial unprovoked seizure
- A second unprovoked seizure, regardless of the elapsed time between seizures, would constitute a medical history of epilepsy
- The medical examiner should consider whether consultation with the primary care provider or specialist is necessary to provide additional information about the driver's seizure to assist in the qualification determination

Childhood Febrile Seizures

Febrile seizures occur in children before 5 years of age and seldom occur after 5 years of age. Most of the increased risk for unprovoked seizure is appreciated in the first 10 years of life.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing that the driver's history of seizures is limited to childhood febrile seizures

Anticonvulsant Therapy

Anticonvulsant therapy is used to control or prevent seizures. Even with effective therapy there is still a risk for a seizure should the medication be missed inadvertently. Anticonvulsants are also prescribed for other conditions that do not cause seizures, including some psychiatric disorders (for antimanic and mood-stabilizing effects) and to lessen chronic pain.

Side effects may include, but are not limited to:

- Depressed mood
- Cognitive deficits
- Decreased reflex responses
- Unsteadiness
- Sedation

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assessing that the side effects do not interfere with safe driving
- Assessing that the anticonvulsant medications are not related to controlling or preventing seizures

Headaches, Vertigo, Dizziness

Headaches

Headache and chronic "nagging" pain may be present to such a degree as to interfere with the driver's ability to control and operate a CMV safely and the medication used to treat headaches may further interfere with safe driving. Complaints should be thoroughly examined when determining the overall fitness of the driver. Disorders with incapacitating symptoms, even if periodic or in the early stages of disease, should be evaluated carefully and on a case by case basis.

Chronic or chronic-recurring headache syndromes can potentially interact with other neurological diagnostic categories in two ways:

- Through complications (e.g., stroke in relation to migraine).
- As a result of associated features of a particular syndrome (e.g., the visual distortion or disequilibrium associated with a migraine attack).

The following types of headaches may interfere with the ability to drive a commercial motor vehicle safely:

- Migraines
- Tension-type headaches
- Cluster headaches
- Post-traumatic head injury syndrome
- Headaches associated with substances or withdrawal

- Cranial neuralgias
- Atypical facial pain

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Frequency and duration of the headaches
- Symptoms associated with headaches such as visual disturbances, and light or noise sensitivity that may interfere with safe driving
- Assessing the side effects of treatment and/or medication

Vertigo and Dizziness

The normal ability to maintain balance and orientation while operating a commercial motor vehicle (CMV) depends upon peripheral nervous system (PNS) sensory input from three major systems and the appropriate motor integration in the central nervous system (CNS). The three PNS sensory systems are vestibular, visual, and proprioception. Inappropriate interactions of these systems or interactions within the CNS may produce an unsafe degree of vertigo or dizziness that endangers the health and safety of the driver and the public.

The most common medications used to treat vertigo are antihistamines, benzodiazepines, and phenothiazines. Special consideration should be given to the use of benzodiazepines or phenothiazines based on their side effects for the treatment of vertigo. Special consideration should be given to the possible sedative side effects of antihistamines. The medical examiner should determine if these drugs produce sedation in the individual driver.

There are risks associated with vertigo and dizziness that must be considered by the medical examiner. Multiple conditions may affect equilibrium or balance resulting in acute incapacitation or varying degrees of chronic spatial disorientation. The medical examiner should consider whether the vertigo and dizziness effects listed below interfere to a significant degree to impair a driver's ability to operate a CMV safely. These include, but are not limited to:

- Cognitive abilities
- Judgment
- Attention
- Concentration
- Sensory or motor function
- Coordination and balance

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Asking the driver about their symptoms, their frequency and duration, and their response to treatment for diagnoses of benign positional vertigo and acute and chronic peripheral vestibulopathy

Infections of the Central Nervous System

For a nervous system (CNS) infection consider the diagnosis and if the driver has a history of early seizures with the condition.

A driver with a current clinical CNS diagnosis or signs and symptoms of a CNS infection should have the etiology confirmed and treatment should be shown to be adequate/effective, safe, and stable by the treating medical provider.

Key points to aid a medical examiner's decision on safe driving ability include using best practice

methodology through experience and research to ensure driver and public safety:

- Being seizure free and off anticonvulsant medication for 1 year for bacterial meningitis without early seizures and for viral encephalitis without early seizures
- Being seizure free and off anticonvulsant medication for 5 years for bacterial meningitis with early seizures
- Being seizure free and off anticonvulsant medication for 10 years for viral encephalitis for early seizures
- Medical clearance from the treating physician should be obtained for bacterial and viral meningitis
- The diagnosis of aseptic meningitis should not preclude driving

Neuromuscular Diseases

As a group, neuromuscular diseases are usually insidious in onset and slowly progressive. The rate of progression will vary and is generally measured in months to years. Neuromuscular disease generally does not interfere with the ability to operate a CMV safely.

You must consider the effects of neuromuscular conditions on the physical abilities of the driver to initiate and maintain safe driving including steering, braking, clutching, getting in and out of vehicles, and reaction time.

Examination by a neurologist or physiatrist who understands the functions and demands of commercial driving may be required to assess the status of the disease. As the medical examiner, you ultimately determine certification status.

Autonomic Neuropathy

Autonomic neuropathy affects the nerves that regulate vital functions, including the heart muscle and smooth muscles.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Consider assessing that the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable by the treating medical provider

- Assessing that a cardiovascular autonomic neuropathy that causes resting tachycardia and orthostatic blood pressure (i.e. Postural Orthostatic Tachycardia Syndrome (POTS)) is controlled and would not interfere with the ability to operate a CMV safely

Rheumatic, Arthritic, Orthopedic, Muscular, Neuromuscular or Vascular Diseases

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Assessment for sensory loss or loss of strength
- Assess for limitations related to range of motion
- Assess for the likelihood of progressive limitation of sudden incapacitation

Conditions Associated with Abnormal Muscle Activity

This group of disorders is characterized by abnormal muscle excitability caused by abnormalities either in the nerve or in the muscle membrane.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Certain diseases are considered high risk due to abnormal excitability such as myotonia, Isaac's syndrome, and Stiff-man syndrome

- You should address each diagnosis on a case-by-case basis. Look to see if the etiology is confirmed and treatment has been shown to be adequate/effective and safe

Neurological Disorders with Significant Sequelae

Disease Process	Examples
Congenital Myopathies	Central Core disease, Centronuclear myopathy, Congenital muscular dystrophy, Rod myopathy
Metabolic Muscle Disease	Homocystinuria, phenylketonuria, maple syrup urine disease
Motor Neuron Disease	Amyotrophic lateral sclerosis (ALS), Progressive bulbar palsy, pseudobulbar palsy
Neuromuscular Junction Disorder	Myasthenia gravis, Lambert-Eaton Myasthenic syndrome, Neuromyotonia
Peripheral Neuropathy	Causes: Diabetes, Autoimmune disease, Vascular disease, Medications, Alcoholism, Vitamin deficiencies
Dementia	Alzheimer's, Pick's disease, Vascular dementia, Lewy body dementia, frontotemporal dementia
Static Neurological Conditions	Static encephalopathy, Arachnoiditis

Progressive Neurological Conditions

Based on a medical examiner's evaluation and assessment; any driver having neurological signs or symptoms may be referred to a neurologist for more detailed and qualified evaluation of neurological status in relation to certification for driving a commercial motor vehicle.

Central Nervous System Tumors

The central nervous system (CNS) is the seat of our intelligence and emotions, and an affliction of the CNS impacts everyday functioning in a direct and visible manner. Brain tumors may alter cognitive abilities and judgment, and these symptoms may occur early in the course of the condition. Sensory and motor abnormalities may be produced both by brain tumors and by spinal cord tumors, depending on the location. For some benign tumors, certification may be possible after successful surgical treatment.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A post-surgical waiting period of 1 year with normal imaging and no neurological deficits should be required for:
    - Infratentorial meningioma
    - Acoustic neuromas
    - Pituitary adenomas
    - Spinal benign tumors

    - Benign extra-axial tumors

- A post-surgical waiting period of 2 years with normal imaging and no neurological deficits should be required for:
    - Benign supratentorial tumors
    - Spinal tumors

Cerebrovascular Disease

Static neurological conditions include common cerebrovascular disease, as well as head and spinal cord injuries.

Cerebrovascular events may cause cognitive, judgment, attention, concentration, and/or motor and sensory impairments that can interfere with normal operation of a commercial motor vehicle (CMV). Drivers with several types of cerebrovascular disease are also at risk for recurring events that can happen without warning. Drivers with ischemic cerebrovascular disease are also at high risk for acute cardiac events, including myocardial infarction or sudden cardiac death. Recurrent cerebrovascular symptoms or cardiac events can occur with sufficient frequency to cause concern about the safe operation of a CMV.

The common types of cerebrovascular disease are:

- Transient ischemic attack/minor stroke with minimal or no residual impairment
- Embolic or thrombotic cerebral infarction with moderate to major residual impairment
- Intracerebral or subarachnoid hemorrhage

Head injury recommendations include complete physical examination, neurological examination, and neuropsychological testing with normal results and the use of the seizure guidelines to determine certification status. Spinal cord injury resulting in paraplegia is disqualifying. Any weakness should be evaluated to determine whether the deficit interferes with the job requirements of a commercial driver.

Embolic and Thrombotic Strokes

Stroke is a major cause of long-term disability. Embolic and thrombotic cerebral infarctions are the most common forms of cardiovascular disease. Risk for complicating seizures is associated with the location of the lesions.

- Cerebellum and brainstem vascular lesions are not associated with an increased risk for seizures
- Cortical and subcortical deficits are associated with an increased risk for seizures
- Evaluation by a neurologist is necessary to confirm the area of involvement

Individuals with embolic or thrombotic cerebral infarctions will have residual intellectual or physical impairments. Fatigue, prolonged work, and stress may exaggerate the neurological residuals from a stroke. Most recover from a stroke will occur within 1 year of the event.

The neurological examination should include assessment of:

- Cognitive abilities
- Judgment
- Attention
- Concentration
- Vision

- Physical strength and agility
- Reaction time

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A waiting period of 1 year if the driver is not at risk for seizures (cerebellum or brainstem vascular lesions)
- A waiting period of 5 years if the driver is not at risk for seizures (cortical or subcortical deficits)
- Assess if there are any neurological residuals or, if present, residuals of a severity that does not interfere with ability to operate a commercial motor vehicle
- Assess the drug regimen for side effects that could impair a driver's ability to operate a CMV safely
- Medical clearance from a neurologist should be obtained

Intracerebral and Subarachnoid Hemorrhages

Intracerebral hemorrhage results from bleeding into the substance of the brain and subarachnoid hemorrhage reflects bleeding primarily into the spaces around the brain. Bleeding occurs as a result of a number of conditions including hypertension, hemorrhagic disorders, trauma, cerebral aneurysms, neoplasms, arteriovenous malformations, and degenerative or inflammatory vasculopathies.

Subarachnoid and intracerebral hemorrhages can cause serious residual neurological deficits in:

- Cognitive abilities
- Judgment
- Attention
- Physical skills

The risk for seizures following intracerebral and subarachnoid hemorrhages is associated with the location of the hemorrhage:

- Cerebellum and brainstem vascular hemorrhages are not associated with an increased risk for seizures
- Cortical and subcortical hemorrhages are associated with an increased risk for seizures
- Appropriate evaluation by a neurologist should be required to confirm the area of involvement

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- A recovery period of 1 year if the driver is not at risk for seizures (cerebellum or brainstem vascular lesions)
- A recovery period of 5 years if the driver is not at risk for seizures (cortical or subcortical deficits)
- Assess if there are any neurological residuals or, if present, residuals of a severity that does not interfere with ability to operate a commercial motor vehicle
- Assess the drug regimen for side effects that could impair a driver's ability to operate a CMV safely
- Medical clearance from a neurologist should be obtained

Traumatic Brain Injury

Traumatic brain injury (TBI) or concussion is an insult to the brain caused by an external physical force, which may produce a diminished or altered state of consciousness, including coma, resulting in long-term impairment of cognitive or physical function**.**

Disturbances of behavioral or emotional functioning may result in total or partial disability and/or psychological maladjustment. Many individuals with TBI suffer loss of memory and reasoning ability, experience speech and/or language problems, and exhibit emotional and behavioral changes that may impair a driver's ability to operate a CMV safely.

TBI is classified by depth of dural penetration and duration of loss of consciousness. The three classes are:

- Severe head injury penetrates the dura and causes a loss of consciousness lasting longer than 24 hours. There is a high risk for unprovoked seizures, and the risk does not diminish over time

- Moderate head injury does not penetrate the dura but causes a loss of consciousness lasting longer than 30 minutes, but less than 24 hours

- Mild head injury has no dural penetration or loss of consciousness and lasts for fewer than 30 minutes. Be sure to distinguish between mild TBI with or without early seizures

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety:

- Being seizure free and off anticonvulsant medications for 2 years for diagnoses of mild TBI with early seizures and moderate TBI without early seizures

- Being seizure free and off anticonvulsant medications for 5 years for diagnosis of moderate TBI with early seizures

- Assessing a normal physical exam without evidence of neurological deficits

- The medical examiner should consider whether consultation with the primary care provider or specialist is necessary to provide additional information about the drivers to assist in the qualification determination

Summary of Key Points for Neurological Events including Best Practice Methodology through Experience and Research

The driver should complete the waiting period seizure free and be off anticonvulsant medication.

Waiting Period	Diagnosis
10 years	History of epilepsy Viral encephalitis with early seizures
5 years	Single unprovoked seizure, no identified acute change, may be distant cause (possible earlier return to driving if normal neurological examination by a specialist in epilepsy who understands the functions and demands of commercial driving, and the driver has a normal electroencephalogram) Bacterial meningitis and early seizures
2 years	Acute seizure with acute structural central nervous system insult
Based on risk of recurrence of	Acute seizure with acute systemic/metabolic illness

Table- Seizure Best Practice Waiting Periods

Other Neurological Event Waiting Periods

The driver should complete the waiting period seizure free and be off anticonvulsant medication.

Waiting Period	Diagnosis
5 years	• Moderate traumatic brain injury (TBI) with early seizures • Stroke with risk for seizures • Intracerebral or subarachnoid hemorrhage with risk for seizures
2 years	• Moderate TBI without early seizures • Surgically removed supratentorial or spinal tumors

1 year	• **Transient ischemic attack, stroke, or intracerebral or subarachnoid hemorrhages with no risk for seizures** • **Surgically repaired arteriovenous malformations/aneurysm with no risk for seizures** • **Surgically removed infratentorial meningiomas, acoustic neuromas, pituitary adenomas, and benign spinal tumors or other benign extra-axial tumors with no risk for seizures** • **Surgically removed Infections of the central nervous system e.g. bacterial meningitis, viral encephalitis without early seizures**

Table- Other Neurological Best Practice Event Waiting Periods

Musculoskeletal Regulations 49 CFR 391.41(b)(1)(2)(7)

49 CFR 391.41(b)(1)

"A person is physically qualified to drive a commercial motor vehicle if that person —

(1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a skill performance evaluation certificate pursuant to §391.49."

49 CFR 391.41(b)(2)

“A person is physically qualified to drive a commercial motor vehicle if that person —

(2) Has no impairment of:
(i) hand or finger which interferes with prehension or power grasping; or

(ii) An arm, foot, or leg which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or any other significant limb defect or limitation which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle, or has been granted a skill performance evaluation pursuant to§391.49."

49 CFR 391.41(b)(7)

“A person is physically qualified to drive a commercial motor vehicle if that person —

"(7)Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his/her ability to control and operate a commercial motor vehicle safely."

Disorders of the musculoskeletal system affect driving ability and functionality necessary to perform heavy labor tasks associated with the job of commercial driving. Medical certification means the driver is physically able to safely drive and perform nondriving tasks. Drivers have a multitude of job demands. The least physically demanding part may be the actual driving. For example, the duties of a commercial driver may include loading and unloading, making multiple stops, driving cross-country and in heavy city traffic, working with load securement devices, and changing tires.

Other common driving tasks include, but are not limited to:

- Manipulating the wheel
- Shifting gears

- Maintaining pressure on the pedals
- Braking
- Monitoring traffic

Other job tasks may include, but are not limited to:

- Performing pre-trip and post-trip safety checks
- Ensuring the vehicle is loaded properly
- Securing the load
- Evaluating and managing vehicle breakdowns
- Responding to emergency situations

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing the driver's physical limitations that may be caused by pain, weakness, decreased range of motion, or decreased strength
- Assessing whether the driver has a missing or impaired leg, foot, toe, arm, hand or finger
- Assessing whether the driver has sufficient power grasp and prehension of hands and fingers to maintain steering wheel grip
- Assessing whether the driver has sufficient strength and mobility in the lower limbs to operate pedals properly

Advisory Criteria/Guidance

Fixed Deficit of an Extremity

When the loss of (hand, foot, leg, or arm) or a fixed impairment to an extremity may interfere with the ability of the driver to operate a commercial motor vehicle (CMV) safely, you are responsible for determining if the driver is otherwise medically fit to drive. A driver may be allowed to drive if the qualification requirements for a Skill Performance Evaluation (SPE) certificate under 49 CFR 391.49 are met.

Skill Performance Evaluation — 49 CFR 391.49

See the Skill Performance Evaluation section at the end of this handbook.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- There is a fixed deficit of an extremity but the driver is otherwise medically qualified during the physical examination
- There is a valid SPE certificate and documentation of compliance with medical requirements (required for recertification with a current SPE certificate)
- The driver must be otherwise medically fit for duty before certification or recertification in accordance with 49 CFR 391.49.

Musculoskeletal Tests

Detection of an undiagnosed musculoskeletal finding during the physical examination may indicate the need for further testing and examination to adequately assess medical fitness for duty. Diagnostic-specific testing may be required to detect the presence and/or severity of the musculoskeletal condition. The additional testing may be ordered by the medical examiner, primary care physician, or musculoskeletal specialist (e.g., orthopedic surgeon, physiatrist).

When requesting additional evaluation, the specialist must understand the role and function of a driver; therefore, it is helpful if you include a description of the role of the driver and a copy of the applicable medical standard(s) and guidelines with the request.

Grip Strength Tests

The Federal Motor Carrier Safety Administration does not require any specific test for assessing grip power. Examples of grip strength tests include, but are not limited to:

- Dynamometer designed to measure grip strength
- Sphygmomanometer used as a screening test for grip by having the applicant repeatedly squeeze the inflated cuff while noting the maximum deflection on the gauge

Diabetes Mellitus Regulation 49 CFR 391.41(b)(3)

"A person is physically qualified to drive a commercial vehicle if that person —

Has no established medical clinical diagnosis of diabetes mellitus currently requiring insulin for control"

On September 19, 2018, the U.S. Department of Transportation Federal Motor Carrier Safety Administration (FMCSA) published in the Federal Register a Final Rule on Diabetes. The new rule took effect on November 19, 2018.

Diabetes Mellitus Regulation 49 CFR 391.46

Regulation: Physical qualification standards for an individual with diabetes mellitus treated with insulin for control.

(a) A CMV driver with Diabetes mellitus treated with insulin for control is physically qualified to operate a commercial motor vehicle provided:

1. The driver meets the physical qualification standards in 49 CFR 391.41.
2. The driver has the evaluation and medical examination required by paragraphs (b) and (c) below.

(b) Prior to an examination or upon expiration of a medical examiner's certificate, the individual must be evaluated by his or her treating clinician who manages and prescribes insulin as authorized by the healthcare professional's state licensing authority.

1. The treating clinician must complete the Insulin-Treated Diabetes Mellitus Assessment Form, MCSA-5870.
2. The treating clinician must sign, date, and provide his or her full name, office address, and telephone number on the MCSA-5870 form.

(c) At least annually, but no later than 45 days after the treating clinician signs and dates the Insulin-Treated Diabetic Mellitus Assessment Form, MCSA-5870, an individual with insulin-treated diabetes mellitus must be medically examined and certified by a medical examiner in accordance with 49 CFR 391.43 and be free of complications that might impair his or her ability to operate a commercial motor vehicle safely.

The medical examiner must:

1. receive a completed Insulin-Treated Diabetes Mellitus Assessment Form, MCSA-5870, signed and dated by the individual's treating clinician for each required examination. This Form shall be retained as part of the Medical Examination Report Form, MCSA-5870

2. determine whether the drive meets the physical qualification standard in 49 CFR 391.46 to operate a commercial motor vehicle. In making that determination, the medical examiner must consider the information in the Insulin-Treated Diabetes Mellitus Assessment Form, MCSA-5870, signed by the treating clinician, and using independent medical judgement, apply the following qualification standards in determining whether the individual with insulin-dependent diabetes mellitus may be certified as physically qualified to operate a commercial motor vehicle

The driver is not physically qualified:

I. to operate a commercial motor vehicle if he or she is not maintaining a stable insulin regimen and not properly controlling his or her diabetes mellitus.
II. On a permanent basis, to operate a CMV if he/she has a diagnosis of either severe non-proliferative or proliferative diabetic retinopathy
III. to operate a CMV up the maximum 12-month period under 49 CFR 391.45(e) until he or she provides the treating clinician with at least the preceding 3 months of electronic blood glucose self-monitoring records while being treated with insulin that are generated in accordance with paragraph (d) of this section.
IV. The individual is not physically qualified to operate a commercial motor vehicle if the individual does not provide the treating clinician with at least the 3 months of electronic blood glucose self-monitoring records while being treated with insulin that are generated in accordance with paragraph (d) of this section is not physically qualified to operate a commercial motor vehicle for more than 3 months. If 3 months of compliant electronic blood glucose self-monitoring records are then provided by the individual to the treating clinician and the treating clinician completes a new Insulin-Treated Diabetes Mellitus Form, MCSA-5870, the medical examiner may issue a medical examiner's certificate that is valid for up to the maximum 12-month period allowed by CFR 391.45(e) and paragraph (c)(iv) of this section.

(d) Individuals with insulin-treated diabetes mellitus must self-monitor their blood glucose in accordance with the specific treatment plan prescribed by the treating clinician. Individuals must maintain blood glucose levels measured with an electronic glucometer that stores all readings, that records the date and time of readings and from which data can be electronically downloaded. The individual is to provide a printout of his data at the time of his evaluation with the treating clinician.

(e) A certified individual with insulin-treated diabetes mellitus who experiences a severe hypoglycemic episode after being certified as physically qualified to operate a commercial motor vehicle is prohibited from operating a commercial motor vehicle, and must report such occurrence to and be evaluated by a treating clinician as soon as is reasonably practicable. A severe hypoglycemic episode is one that requires the assistance of others, or results in loss of consciousness, seizure, or coma. The prohibition on operating a commercial motor vehicle continues until a treating clinician:

1. Has determined that the cause of the severe hypoglycemic episode has been addressed;
2. Has determined that the driver is maintaining a stable insulin regimen and proper control of his or her diabetes mellitus;
3. Completes a new Insulin-Treated Diabetes Mellitus Assessment Form, MCSA-5870
4. The individual must retain the Form and provide it to the medical examiner at his or her next medical examination

Insulin Treated Diabetic Mellitus Assessment Form: itdm-assessment-form-final.pdf or https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/422521/itdm-assessment-form-final.pdf

Diabetes Mellitus

The most common form of diabetes mellitus is Type 2 (adult onset diabetes mellitus). Individuals with Type 2 diabetes mellitus often:

- Can produce insulin
- Can control with non-insulin medication and lifestyle changes
- May eventually have insulin production fail and require insulin replacement therapy

While the detection and management of both hyperglycemia and hypoglycemia are important aspects of the overall medical management of a person with diabetes mellitus, the detection and management of hypoglycemia is more relevant to safety considerations, in the certification of the commercial motor vehicle (CMV) driver, with diabetes mellitus.

Blood Glucose Control

Some of the factors related to commercial driving that affect blood glucose control include, but no limited to:

- Fatigue and lack of sleep
- Poor diet and missed meals
- Emotional conditions including stress
- Concomitant illness

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Whether treatment of diabetes consists of diet, pills, insulin, or other injectable medications
- Glycosuria (dip stick urinalysis) that may require a blood glucose check
    - Signs of target organ damage associated with dysfunction of the senses, including, but not limited to:
        - Retinopathy
        - Nephropathy
        - Peripheral neuropathy
- Signs of target organ damage that can cause gradual or sudden incapacitation, including, but not limited to:
    - Coronary heart disease
    - Cerebrovascular disease, including:
        a. Transient ischemic attack
        b. Embolic or thrombotic stroke
        c. Peripheral vascular disease
    - Autonomic neuropathy
    - Nephropathy

A Final Rule dated November 19, 2018 created a new standard for individuals with insulin-treated diabetes mellitus and clarified certain aspects of the existing diabetes mellitus regulations. These include:

- No annual vision examination is required for any individual with diabetes mellitus
- No annual examinations or quarterly examinations by an endocrinologist are, as was under the exemption program
- A treating clinician is defined as a healthcare professional who manages, and prescribes insulin for the treatment of the individual's diabetes mellitus
- Insulin-treated diabetic mellitus individuals may be certified as medically qualified for up to 1 year
- Non-insulin-treated diabetic mellitus individuals may be certified as medically qualified for up to 2 years
- Hemoglobin A1C levels should not be relied on as a sole measure of a diabetic's individual

ability to safely operate a CMV
    - It is for appropriate for treating clinicians to set individualized, clinically based parameters for blood glucose limits rather than establishing a regulatory requirement
- An insulin-treated diabetes mellitus individual who experiences a severe hypoglycemic episode after being certified as physically qualified to operate a CMV is prohibited from operating a CMV, and must report such occurrence to and be evaluated by a treating clinician as soon as is reasonably practicable.
    - A severe hypoglycemic episode is defined as an episode requiring the assistance of others, or resulting in a seizure, coma, or loss of consciousness
    - No specific timeframe is given after a severe hypoglycemic episode that an individual is prohibited from driving a CMV. The treating clinician is to determine and treat the cause of a severe hypoglycemic episode, assess the response to treatment, determine when the cause has been addressed and then complete the ITDM Assessment Form. MCSA-5870
    - There is no regulation for a moderate hypoglycemic episode expecting that the treating clinician to evaluate a hypoglycemic episode and other diabetic complications
    - There is no regulation pertaining to individuals carry readily absorbed glucose

- The diabetes grandfather provision in 391.64(a) is eliminated

Incretin Mimetic

An incretin mimetic is used to improve glycemic control in people with Type 2 diabetes and is indicated as adjunctive therapy. Use of an incretin mimetic in conjunction with other oral hypoglycemic medications have an increased risk of hypoglycemia.

Incretin mimetics are injectable but are not insulin.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assess if treatment has been adequate, effective and safe and does not endanger the safety and health of the driver and the public

Oral Hypoglycemic Medications

Hypoglycemic drugs taken orally are frequently prescribed for persons with diabetes mellitus to help stimulate natural body production of insulin. If diabetes mellitus can be controlled by the use of oral medication and diet, an individual may be considered for driver certification using the physical qualification requirements of 49 CFR 391.41.

Other Diseases

The fundamental question when deciding if a commercial driver should be certified is whether the driver has a condition that so increases the risk of sudden death or incapacitation that the condition creates a danger to the safety and health of the driver, as well as to the public sharing the road.

The qualification standards cover 13 areas that directly relate to the driving function; however, on a case by case basis, use your clinical skills and knowledge of the Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards to evaluate the overall medical fitness for duty of the driver.

Nephropathy

Diabetic nephropathy accounts for a significant number of the new cases of end-stage renal disease. The first sign of nephropathy commonly is the development of persistent proteinuria. End-stage renal disease follows later. Whether nephropathy is a disqualifying factor should be determined on the basis

of the degree of disease progression and the associated impact on driver ability to function.

The prevalence of nephropathy is strongly related to the duration of diabetes mellitus. After 15 years of living with diabetes mellitus, the frequency of nephropathy is higher among individuals who use insulin than with individuals who do not use insulin.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Having a treatment plan that manages the disease and does not interfere with safe driving
- Having an abnormal urinalysis, including but not limited to proteinuria, may indicate some degree of renal dysfunction. You may, on a case-by-case basis, obtain additional tests and/or consult specialist to adequately assess driver medical fitness for duty.

Psychological Regulation 49 CFR 391.41(b)(9):

"A person is physically qualified to drive a commercial motor vehicle if that person — Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his/her ability to drive a commercial motor vehicle safely."

Safe and effective operation of a commercial motor vehicle (CMV) requires high levels of physical strength, skill, and coordination as well as the ability to maintain adequate attention and react promptly and appropriately to traffic, emergency situations, and other job-related stressors.

Some psychological or personality disorders can directly affect memory, reasoning, attention, and judgment. Somatic and psychosomatic complaints should be thoroughly examined when determining overall fitness to drive. Disorders of a periodically incapacitating nature, even in the early stages of development, may warrant disqualification.

Risk factors associated with personality disorders can interfere with driving ability by compromising:

- Attention, concentration, or memory affecting information processing and the ability to remain vigilant to the surrounding traffic and environment
- Visual-spatial function (e.g., motor response latency)
- Impulse control, including the degree of risk taking
- Judgment, including the ability to predict and anticipate
- Ability to problem solve (i.e., executive functioning), including the ability to respond to simultaneous stimuli in a changing environment when potentially dangerous situations could exist

The driver with:

- Active psychotic disorder may exhibit unpredictable behavior and poor judgment
- Mood disorder may, during a
    - Manic episode exhibit grandiosity, impulsiveness, irritability, and aggressiveness.
    - Depressive episode exhibit slowed reaction time and poor judgment
- Personality disorders, depending on severity and type, may exhibit inflexible and maladaptive behaviors and have an increased crash rate

As a medical examiner, your fundamental obligation during the psychological assessment is to establish

whether a driver has a psychological disease or disorder that increases the risk for periodic, residual, or insidious onset of cognitive, behavioral, and/or functional impairment that endangers public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing if requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

It is the degree of inappropriateness and the cumulative effect of driver presentation and interaction that provide a cue that a driver may require more in-depth mental health evaluation.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Looking for signs of alcoholism or problem drinking, drug abuse, or tremors
- Looking for potential negative effects of medication use, including over-the-counter medications, while driving

Advisory Criteria/Guidance

There are three categories of risk associated with psychological disorders.

- The **mental disorder**, including symptoms and/or disturbances in performance that are an integral part of the disorder and may pose hazards for driving
- **Residual symptoms** occurring after time-limited reversible episodes or initial presentation of the full syndrome that can interfere with safe CMV driving
- **Psychopharmacology**, as many psychotropic medications can compromise performance to the degree that CMV driving would be hazardous

The recommendations do not support automatic exclusion from CMV driving based solely on the diagnosis. Typically, the more serious the diagnosis, the more likely it is that the driver will be medically disqualified. Careful consideration should also be given to the side effects and interactions of medications in the overall qualification determination.

Many of the medications used to treat psychological disorders have effects and/or side effects that render driving unsafe.

Psychological Disorder Therapies

Antidepressant Therapy

Medical Examiners should do a case-by-case assessment of drivers treated with antidepressant medication. Evidence indicates that some antidepressant drugs significantly interfere with skills performance and that these medications vary widely in the degree of impact. With long-term use of antidepressants, many drivers will develop a tolerance to the sedative effects. Your evaluation must consider both the specific medicine used and the pertinent characteristics of the driver.

First generation antidepressants have consistently been shown to interfere with safe driving. First generation antidepressants include tricyclics.

Second generation antidepressants have fewer side effects and are generally safe; however, these medications can still interfere with safe driving and require case-by-case evaluation. Second generation antidepressants include selective serotonin reuptake inhibitors (SSRIs); serotonin and

norepinephrine reuptake modulators; and unicyclic aminoketones. You should consider the underlying reason for treatment when determining certification.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- The medication has been shown to be adequate/effective, safe, and stable
- Noting the risks for drivers on first generation antidepressants, which includes
- Assessing the severity of the underlying mental disorder
- Use the medication form to get specific information regarding medications

391.41 CMV Driver Medication Form: MCSA-5895, requests additional information regarding medications prescribed by the treating physician as an optional tool for medical examiners to use in determining if a driver is medically qualified under 49 CFR 391.41.

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/83586/39141-cmv-driver-medication-form-mcsa-5895.pdf

Antipsychotic Therapy

Antipsychotic drugs include typical and atypical neuroleptics. These agents are used to treat schizophrenia, psychotic mood disorders, and some personality disorders. Some cases of nausea and chronic pain are also treated with antipsychotic agents. Many of the conditions are associated with behaviors and symptoms such as impulsiveness, disturbances in perception and cognition, and an inability to sustain attention. Often the behaviors and symptoms are only partially corrected by neuroleptics.

Neuroleptics can cause a variety of side effects that can interfere with driving, such as motor dysfunction that affects coordination and response time, sedation, and visual disturbances (especially at night).

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Not certifying the driver until the medication has been shown to be adequate/effective, safe, and stable
- Noting the dose, and duration of drug therapy
- Assessing the severity of the underlying mental disorder
- Use the medication form to get specific information regarding medications

Anxiolytic and Sedative Hypnotic Therapy

Anxiolytic drugs used for the treatment of anxiety disorders and to treat insomnia are termed sedative hypnotics. Studies have demonstrated that benzodiazepines, the most commonly used anxiolytics and sedative hypnotics, impair skills performance in pharmacologically active dosages.

The effects of benzodiazepines on skills performance generally also apply to virtually all non-benzodiazepines sedative hypnotics, although the impairment is typically less profound. Barbiturates and other sedative hypnotics related to barbiturates cause greater impairment in performance than benzodiazepines. Epidemiological studies indicate that the use of benzodiazepines and other sedative hypnotics are probably associated with an increased risk of automobile crashes but the medical examiner should evaluate on a case by case basis.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing if the hypnotic is short-acting (half-life of less than 5 hours), the lowest effective dose

and if used for a short period (less than 2 weeks)
- Assessing if the driver has symptoms or side effects that interfere with safe driving
- Assessing if the anxiolytic is non-sedating)
- Use medical clearance from the treating physician or use the medication form to get specific information regarding medications

Central Nervous System Stimulant Therapy

Psychiatric uses of central nervous system (CNS) stimulants (e.g., dextroamphetamine, methylphenidate, and pemoline) include primary treatment of narcolepsy and adult attention deficit hyperactivity disorder (ADHD), both of which are associated with psychomotor deficits related to sleepiness or hyperactivity.

CNS stimulants may also be used as adjuncts to antidepressants. CNS stimulants improve performance on simple tasks, but not on tasks requiring complex intellectual functions. For some conditions (e.g., fatigue, brain damage, adult ADHD), low doses of CNS stimulants can enhance:

- Vigilance and attention
- Performance of simple tasks (not complex intellectual functions)

Before qualifying a driver with ADHD who is using a CNS stimulant:

- Use the medication form to get specific information regarding medications
- Use caution when determining the side effects of medication

Electroconvulsive Therapy

Electroconvulsive therapy (ECT) is sometimes used to treat depression. ECT produces an acute organic mental syndrome characterized by confusion, disorientation, and loss of short-term memory even with low-dose, brief pulse, unilateral treatment. Clinical experience has shown that acute side effects usually resolve rapidly and almost invariably within a few months.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- The driver should be symptom free following a course of ECT
- The driver should not be undergoing maintenance ECT
- Medical clearance from the treating behavioral health specialist should be obtained

Lithium Therapy

Lithium (Eskalith) is used for the treatment of bipolar and depressive disorders. Studies suggest that there is little evidence of lithium interfering with driver skill performance.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing if the driver is asymptomatic
- Assessing if the driver has lithium levels that are maintained in the therapeutic range
- Assessing the severity of the underlying mental disorder

Adult Attention Deficit (Hyperactivity) Disorder

Children who had attention deficit hyperactivity disorder (ADHD) or attention deficit disorder, (ADD) often continue to show signs of the disorder into adulthood.

Essential features of adult ADHD or ADD include age-inappropriate levels of inattention, impulsiveness, and hyperactivity. Symptoms include mood lability, low frustration tolerance, and explosiveness.

Risks to safe driving associated with adult ADHD or ADD include co-morbid antisocial or borderline personality disorder and/or other disorders, side effects of medication, and a high incidence of substance abuse; however, a significant percentage of individuals with adult ADHD or ADD show a moderate to marked degree of improvement on central nervous system stimulant medication.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Complying with the treatment program
- Tolerating treatment without disqualifying side effects (e.g., sedation or impaired coordination, substantially compromised judgment, suicidal behavior or ideation, or a personality disorder that is repeatedly manifested by overt, inappropriate acts)
- Having undergone a comprehensive evaluation from an appropriate mental health professional to support the diagnosis of ADHD should be considered

Bipolar Mood Disorder

Mood disorders are characterized by their pervasiveness and symptoms that interfere with the ability of the individual to function socially and occupationally. The two major groups of mood disorders are bipolar and depressive disorders. Bipolar disorder is characterized by one or more manic episodes and is usually accompanied by one or more depressive episodes.

The onset of manic episodes may be sudden or gradual. Symptoms include excessively elevated, expansive, or irritable moods. During a manic episode, judgment is frequently diminished, and there is an increased risk of substance abuse. Some episodes may present with delusions or hallucinations.

Treatment for bipolar mania may include lithium and/or anticonvulsants to stabilize mood and antipsychotics when psychosis manifests.

Symptoms of a depressive episode include loss of interest and motivation, poor sleep, appetite disturbance, fatigue, poor concentration, and indecisiveness. A severe depression is characterized by psychosis, severe psychomotor retardation or agitation, significant cognitive impairment (especially poor concentration and attention), and suicidal thoughts or behavior. In addition to the medication used to treat mania, antidepressants may be used to treat bipolar depression.

Other psychiatric disorders, including substance abuse, frequently coexist with bipolar disorder.

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Being symptom free for a minimum of 6 months following a nonpsychotic major depression unaccompanied by suicidal behavior
- Being symptom free for a minimum of 1 year following a severe depressive episode, a suicide attempt, or a manic episode

- Being able to tolerate treatment without disqualifying side effects (i.e. sedation or impaired coordination)
- Avoiding first-generation antidepressants, which includes tricyclics which may interfere with safe driving
- Medical clearance from the behavioral health specialist should be obtained and use of the driver medication form would be of use in determining driver qualification

Major Depression

Major depression consists of one or more depressive episodes that may alter mood, cognitive functioning, behavior, and physiology. Symptoms may include a depressed or irritable mood, loss of interest or pleasure, social withdrawal, appetite and sleep disturbance that lead to weight change and fatigue, restlessness and agitation or malaise, impaired concentration and memory functioning, poor judgment, and suicidal thoughts or attempts. Hallucinations and delusions may also develop, but they are less common in depression than in manic episodes.

Most individuals with major depression will recover; however, some will relapse within 5 years. A significant percentage of individuals with major depression will commit suicide; the risk is the greatest within the first few years following the onset of the disorder.

Although precipitating factors for depression are not clear, many patients experience stressful events in the 6 months preceding the onset of the episode. In addition to antidepressants, other drug therapy may include anxiolytics, antipsychotics, and lithium. Prophylactic treatment may prevent or shorten future episodes. Electroconvulsive therapy is also used to treat some cases of severe depression.

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Being symptom free for a minimum of 6 months following a nonpsychotic major depression unaccompanied by suicidal behavior
- Being symptom free for a minimum of 1 year following a severe depressive episode, a suicide attempt, or a manic episode
- Being able to tolerate treatment without disqualifying side effects (i.e. sedation or impaired coordination)
- Medical clearance from the behavioral health specialist should be obtained

Post-Traumatic Stress Disorder (PTSD)

Post-traumatic stress disorder is an anxiety disorder that develops following frightening, stressful, or distressing life events. The disorder can be associated with behavior changes, mood swings, and suicidal ideations. There are two primary types of treatment for PTSD consisting of medications and psychotherapy. The most common and effective types of psychotherapy used to treat PTSD include exposure therapies (cognitive behavioral or cognitive processing therapy. Most psychotherapy approaches help individuals with this condition are time limited and can be successfully completed by most individuals with mild to medium severity in a year. Some individuals will take less time, and more severe forms of PTSD can often take longer to treat.

Medications are nearly always used in conjunction with psychotherapy for PTSD. Medications can lessen some of the symptoms but won't relieve an individual's feelings related to the original trauma. Medication options include antidepressants such as the SSRI antidepressants. These types of antidepressants decrease anxiety, depression, and panic. They may also reduce aggression, impulsivity, and suicidal thoughts. Benzodiazepines are often prescribed for rapid relief of anxiety but

are also associated with dependence. Available data reveals that although benzodiazepines can provide immediate relief of symptoms, over time that can exacerbate PTSD. Other treatment for PTSD includes antipsychotic medications and mood stabilizers.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Having the driver comply with the treatment program
- Tolerating treatment without disqualifying side effects such as suicidal behavior or ideation
- Having a comprehensive evaluation from an appropriate mental health professional (psychiatrist) who understands the functions and demands of commercial driving
- Medical clearance from the treating psychiatrist should be obtained

Antisocial Personality Disorders

Any personality disorder characterized by excessive, aggressive, or impulsive behaviors warrants further inquiry for risk assessment to establish whether such traits are serious enough to adversely affect behavior in a manner that interferes with safe driving.

The medical examiner should consider whether if the disorder is severe enough to have repeatedly been manifested by overt acts that interfere with safe operation of a commercial vehicle.

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- You should not certify the driver until the etiology is confirmed and treatment has been shown to be adequate /effective, safe, and stable.
- Watching for prominent negative symptoms, including substantially compromised judgment, attentional difficulties, suicidal behavior or ideation, or a personality disorder that is repeatedly manifested by overt, inappropriate acts
- Medical clearance from the treating physician should be obtained

Schizophrenia and Related Psychotic Disorders

Schizophrenia is the most severe condition within the spectrum of psychotic disorders. Characteristics of schizophrenia include psychosis (e.g., hearing voices or experiencing delusional thoughts), negative or deficit symptoms (e.g., loss of motivation, apathy, or reduced emotional expression), and compromised cognition, judgment, and/or attention. There is also an increased risk for suicide.

Key point:

- Individuals with chronic schizophrenia should not be considered medically qualified for commercial driving to help in determining whether a driver is medically qualified

Related conditions include:

- Schizophreniform disorder
- Brief reactive psychosis
- Schizoaffective disorder

- Delusional disorder

Risks for Commercial Driving

Clinical experience shows that a person who is actively psychotic may behave unpredictably in a variety of ways. For example, a person who is hearing voices may receive a command to do something harmful or dangerous, such as self-mutilation. Delusions or hallucinations may lead to violent behavior. Antipsychotic therapy may cause sedation and motor abnormalities (e.g., muscular rigidity or tremors) and impair coordination, particularly as the medication is being initiated and doses are adjusted.

Except for a confirmed diagnosis of schizophrenia, determination may not be based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Being symptom free for a minimum of 6 months if the individual has a brief reactive psychosis or schizophreniform disorder
- Being symptom free for a minimum of 1 year if the individual has any other psychotic disorder
- Not having a diagnosis of schizophrenia or active psychosis
- Tolerating treatment without disqualifying side effects (i.e. sedation or impaired coordination)
- Medical clearance from the treating behavioral health specialist should be obtained to help in determining whether a driver is medically qualified

Drug Abuse and Alcoholism Regulations 49 CFR 391.41(b)(12) and (b)(13)

49 CFR 391.41(b)(12)

"A person is physically qualified to drive a commercial motor vehicle if that person —

(12)(i) Does not use any drug or substance identified in 21 CFR 1308.11 Schedule I, an amphetamine, a narcotic, or any other habit-forming drug.

(ii) Does not use any non-Schedule I drug or substance that is identified in the other Schedules in 21 CFR part 1308 except when the use is prescribed by a licensed medical practitioner, as defined in §382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle."

49 CFR 391.41(b)(13)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no current clinical diagnosis of alcoholism."

There is overwhelming evidence that drug and alcohol use and/or abuse interferes with driving ability. Although there are separate standards for alcoholism and other drug problems, much substance abuse is polysubstance abuse, especially among persons with antisocial and some personality disorders.

Alcohol and other drugs cause impairment through both intoxication and withdrawal. Episodic abuse of substances by commercial drivers that occurs outside of driving periods may still cause impairment during withdrawal. However, when in remission, alcoholism is not disabling unless transient or permanent neurological changes have occurred.
Alcohol and other drug dependencies and abuse are profound risk factors associated with personality disorders that may interfere with safe driving.

Even in the absence of abuse, the commercial driver should be made aware of potential effects on driving ability resulting from the interactions of drugs with other prescription and nonprescription drugs and alcohol (e.g., alcohol enhances hypoglycemic effects of sulfonylureas in diabetics).

The Office of Drug & Alcohol Policy & Compliance oversees intermodal (e.g., Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration, Federal Transit Administration, and Federal Aviation Administration) drug and alcohol testing programs in accordance with the Omnibus Transportation Employee Testing Act of 1991.

See the FMCSA Drug and Alcohol Program at https://www.fmcsa.dot.gov/regulations/drug-alcohol-testing-program for more information about the regulations and guidelines governing CMV drivers.

As a medical examiner, your fundamental obligation is to medically evaluate a driver to ensure that the driver has no medical condition that interferes with the safe performance of driving tasks on a public road. If a driver has a current drinking problem, clinical alcoholism, or uses a Schedule I drug or other substance such as an amphetamine, a narcotic, or any other habit-forming drug, the effects and/or side effects may interfere with driving performance, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and any additional testing deemed necessary by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing if the driver uses alcohol regularly and frequently
- Assessing if the driver uses narcotics or other habit forming drugs
- Assessing for possible interactions with over-the counter medications
- Assessing if the driver has signs of alcoholism or drug abuse during the physical exam such as tremors, needle track marks, or multiple skin eruptions

About 49 CFR 382. Alcohol and Drug Rules

The purpose of this part is to establish programs designed to help prevent crashes and injuries resulting from the misuse of alcohol or use of controlled substances by drivers of commercial motor vehicles (CMVs).

49 CFR 382.207 Pre-duty use of alcohol

No driver shall perform safety sensitive functions within 4 hours after using alcohol.
No employer having actual knowledge that a driver has used alcohol within four hours shall permit a driver to perform or continue to perform safety-sensitive functions.

The effects of alcohol on behavior vary with the individual and with the concentration of alcohol in the individual's blood. The level of alcohol achieved in the blood depends on the amount of alcohol consumed and the time period over which it was consumed.
EXAMPLE: 150 lb. person – each drink adds 0.02% to blood alcohol concentration and each hour that passes removes 0.01% from it.

Key Points About 49 CFR Part 382

Who must be tested?

- All drivers, including part-time, holding a commercial driver's license (CDL) and operating

CMVs (greater than 26,000 combined gross vehicle weight rating, or transporting more than 16 passengers, or placarded hazardous materials) on the public roadways must be U.S. Department of Transportation (DOT) drug and alcohol tested. This means any driver required to possess a CDL, including:

- Drivers employed by Federal, State, and local government agencies
- Owner operators
- Equivalently licensed drivers from foreign countries
- For-hire motor carriers

When is drug and/or alcohol testing required?

- **Pre-employment:**
  - Drug testing is required; however, a driver may be exempted from testing if the driver was in a testing program within the last 30 days and tested within the last 6 months or in a program for the previous 12 months.
  - Alcohol testing is **not** required; however, the employer may require alcohol testing before the driver can perform safety-sensitive functions. The employer may make the job offer contingent upon passing an alcohol test.
- **Post-accident** drug and/or alcohol testing is required for all fatal crashes and when the driver is cited for a moving traffic violation.
- **Reasonable suspicion** testing is conducted when a trained supervisor or company official observes behavior or appearance that is characteristic of drug and/or alcohol misuse.
- **Random** drug and/or alcohol testing is conducted on a random, unannounced basis just before, during, or just after performance of safety-sensitive functions.
- **Return-to-duty** and **follow-up** testing is conducted when an individual who has violated the prohibited drug and/or alcohol conduct standards returns to performing safety-sensitive duties.

Employer responsibilities include:

- Implementing and conducting drug and alcohol testing programs
- Providing a list of substance abuse professionals (SAPs)
- Ensuring that the driver who is returning to a safety-sensitive position has complied with SAP recommendations
- Conducting follow-up testing to monitor that the driver is compliant with DOT alcohol conduct guidelines and abstaining from unauthorized drug use

Employer responsibilities do not include:

- Providing SAP evaluations
- Paying for driver SAP evaluation, education, or treatment

Advisory Criteria/Guidance

Alcoholism

Except where absolute criteria exist (i.e., a current clinical diagnosis of alcoholism), as a medical examiner, you make the final determination as to whether the driver meets the Federal Motor Carrier Safety Administration (FMCSA) medical standards for driver certification.

Use whatever tools or additional assessments you feel are necessary. If the driver shows signs of alcoholism, have the driver consult a specialist for further evaluation.

If you believe immediate testing for alcohol is warranted, contact FMCSA or contact the employer of the driver directly for information on controlled substances and alcohol testing under Part 382 of the Federal Motor Carrier Safety Regulations.

A driver MUST submit to alcohol testing if there is reasonable suspicion that the U.S. Department of Transportation (DOT) prohibitions concerning alcohol are violated. Suspicion MUST be based on specific observations concerning driver behavior, speech, or body odor.

Interpretation for 49 CFR 391.41

When an interstate driver tests positive for alcohol or controlled substances under Part 382, the driver is not required to be medically re-examined or to obtain a new medical examiner's certificate provided the driver is seen by a SAP who evaluates the driver and does not make a clinical diagnosis of alcoholism. The SAP provides the driver with documentation allowing the driver to return to work.

If the SAP determines that alcoholism exists, the driver is not qualified to drive a commercial motor vehicle in interstate commerce. The ultimate responsibility rests with the motor carrier to ensure the driver is medically qualified and to determine whether a new medical examination should be completed.

The driver with a history of alcoholism should have:

- No residual disqualifying physical impairment
- Successfully completed counseling and/or treatment

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- Assessing that there is no residual disqualifying physical impairment due to alcohol
- The driver having successfully completed counseling and/or treatment

Medications/Drug Use Regulation 49 CFR 391.41(b)(12)

"A person is physically qualified to drive a commercial motor vehicle if that person —
(12)(i) Does not use any drug or substance identified in 21 CFR 1308.11 Schedule I, an amphetamine, a narcotic, or any other habit-forming drug.

(ii) Does not use any non-Schedule I drug or substance that is identified in the other Schedules in 21 CFR part 1308 except when the use is prescribed by a licensed medical practitioner, as defined in §382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle."

The effects and/or side effects of medications may interfere with safe driving. The driver may experience an altered state of alertness, attention, or even temporary confusion. Other medications may cause physical symptoms such as hypotension, sedation, or increased bleeding that can interfere with task performance or put the driver at risk for gradual or sudden incapacitation. Combinations of medications and/or supplements may have synergistic effects that potentiate side effects, causing gradual or sudden incapacitation.

The demands of commercial driving may complicate adherence to prescribed dosing intervals and

precautions. Irregular meal timing, periods of sleep deprivation or poor sleep quality, and irregular or extended work hours can alter the effects of medicine and contribute to missed or irregular dosing. Physical demands may increase pain and the need for medication.

Three types of medications may be used by the commercial driver:

- Prescription
- Over-the-counter (OTC)
- Supplements and herbs

Every year, more medications are available without prescription and provider supervision. Nonprescription medications are not necessarily safe to use while driving

In the advisory criteria general information, you are instructed to discuss common prescriptions and OTC medications relative to the side effects and hazards of these medications while driving. In addition, educate the driver to read warning labels on all medications.

Drug Abuse

All drug test results are reviewed and interpreted by a physician who is certified as a medical review officer (MRO). When there is a positive result, the MRO contacts the driver and conducts an interview to determine if there is an alternative medical explanation for finding drugs in the urine specimen. The MRO notifies the employer only after determining that a positive test result was caused by unauthorized driver use of a controlled substance.

All urine specimens are tested for:

- Marijuana
- Cocaine
- Amphetamines and methamphetamines
- Opiates- opium and codeine derivatives
- Phencyclidine (PCP)

A driver MUST be removed from safety-sensitive duty when the driver has a positive drug test result caused by the unauthorized use of a controlled substance. To be returned to safety-sensitive duties the driver MUST:

- Be evaluated by a substance abuse professional (SAP)
- Comply with recommended rehabilitation
- Have a negative result on a return-to-duty drug test

Key points to aid a medical examiner's decision on safe driving ability include using best practice methodology through experience and research to ensure driver and public safety include:

- A driver must be evaluated by a SAP, comply with recommended rehabilitation, and have a negative result on a return-to-duty drug test PRIOR to returning to safety-sensitive duties
- Drivers taking Schedule I controlled substances, Methadone, and Marijuana (even if in a State that allows medicinal use) cannot be certified to drive
- Drivers taking Amphetamines and Narcotics must have medical clearance from the treating physician, but the final decision on certification is dependent on the decision of medical examiner who should assess risk and impact affecting the safety of the driver and the public
- Assessing for side effects including dizziness, hypotension, sedation, depressed mood,

cognitive deficits, decreased reflex responses, or unsteadiness

391.41 CMV Driver Medication Form MCSA 5895

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/83586/39141-cmv-driver-medication-form-mcsa-5895.pdf

Advisory Criteria/Guidance

About 21 USC Sec. 812 Schedules of Controlled Substances

49 CFR 391.41(b)(12) identifies driver use of Schedule I drugs as medically disqualifying. The 1970 Comprehensive Drug Abuse Prevention and Control Act provides the framework for the current Drug Enforcement Administration (DEA) drug schedules.

There are five schedules of controlled substances, I, II, III, IV, and V. The drug schedules are based on addiction potential and medical use but not on side effects. The lists are updated annually.

Key Points About 21 USC Sec. 812

Schedule I

These drugs have no currently accepted medical use in the United States, have a high abuse potential, and are not considered safe, even under medical supervision. These substances include many opiates, opiate derivatives, and hallucinogenic substances. Heroin and marijuana are examples of Schedule I drugs. The exception criteria of 49 CFR 41(b)(12)(ii) does not apply to any Schedule I substance.

Schedule II

These drugs have currently accepted medical uses but have a **high abuse** potential that may lead to severe psychological or physical dependence. Schedule II drugs include opioids, depressants, and amphetamines. The opioids in Schedule II include natural opioids (e.g., morphine) and synthetic opioids (e.g., OxyContin).

Schedules III -- V

These drugs have decreased potential for abuse than preceding schedules. Abuse may lead to moderate or low physical dependence or high psychological dependence. Schedule III drugs include tranquilizers. Schedule IV drugs include drugs such as chlorohydrate and phenobarbital. Schedule V drugs have the lowest potential for abuse and include narcotic compounds or mixtures.

Side effects are not part of the DEA schedule rating criteria. Therefore, a substance can have little risk for addiction and abuse but still have side effects that interfere with driving ability.

49 CFR 381.300 Exemptions

" (a) An exemption is temporary regulatory relief from one or more FMCSR given to a person or class of persons subject to the regulations, or who intend to engage in an activity that would make them subject to the regulations.

(b) An exemption provides the person or class of persons with relief from the regulations for up to two years, and may be renewed.

(c) Exemptions may only be granted from one or more of the requirements contained in the following parts and sections of the FMCSRs ...

(c)(3) Part 391 — Qualifications of Drivers."

Federal Vision Exemption Program

The FMCSA Vision Exemption Program is for monocular vision. The vision exemption is issued for a maximum of 2 years and is renewable.

The driver must be otherwise qualified under 49 CFR 391.41(b)(1-13) or hold another valid medical exemption to legally operate a commercial motor vehicle in interstate commerce. Provisions of the vision exemption include an annual medical examination and an eye examination by an ophthalmologist or an optometrist.

At the annual recertification examination, the driver should present the current vision exemption and a copy of the specialist eye examination report. Certify the qualified driver for 1 year and issue a medical examiner's certificate with the "accompanied by" exemption checkbox marked and write "vision" to identify the type of Federal exemption.

The motor carrier is responsible for ensuring that the driver has the required documentation before driving a commercial vehicle. The driver is responsible for carrying both the vision exemption and the medical examiner's certificate while driving and keeping both current.

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/driver-medical-requirements/10451/vision-exemption-package-0918.pdf

Qualified by Operation of 49 CFR 391.64: "Grandfathered"

Prior to the implementation of the Federal Vision Exemption Program, FMCSA conducted an initial vision study program that ran from 1992 to 1996. At the conclusion of that study, 2,656 drivers received a one- time letter confirming participation in the study and granting a continued exemption from the monocular vision requirement, as long as the driver is otherwise medically fit for duty and can meet the vision qualification requirements with the one eye. The driver who was grandfathered must have an annual medical examination and an eye examination by an ophthalmologist or optometrist. There are very few remaining drivers from that program.

At the annual medical examination, the driver should present to the medical examiner the letter identifying the driver as a participant in the vision study program and a copy of the specialist eye examination report. Certify the qualified driver for 1 year and issue a medical examiner's certificate with the "Qualified by operation of 49 CFR 391.64" checkbox marked.

Federal Hearing Exemption Program

The driver must perceive forced whisper in the better ear at not less than 5 feet with or without a hearing aid or no hearing loss in better than greater than 40 decibels at 500, 1000 and 2000 HZ with or without a hearing aid. The driver may apply for an exemption from Section 391.41(b)(11) of the Federal Motor Carrier Safety Regulations which prohibits an individual who does not pass the hearing requirement from operating a commercial motor vehicle in interstate commerce. The process to determine if such an exemption should be granted includes a thorough review of the driver's medical records, his/her driving record over 3 years, and any other documents to support exemption. The Agency carefully evaluates the driver's application and, as required by 49 CFR U.S.C 31315(b), prepare a Federal Register notice requesting public comment on the application for the exemption. After review of public comments received in response to the Federal Register notice, FMCSA will make a decision to grant or deny the application. FMCSA is authorized to grant exemptions for up to 2 years if it determines that public safety will not be harmed.

The motor carrier is responsible for ensuring that the driver has the required documentation before driving a commercial vehicle. The driver is responsible for carrying both the hearing exemption and the medical examiner's certificate while driving and keeping both current.

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/regulations/medical/driver-medical-requirements/57236/federalhearingexemptionapplication.pdf

Federal Seizure Exemption Program

The FMCSA Seizure Exemption Program is for a seizure or epilepsy diagnosis. The seizure exemption is issued for a maximum of 2 years and is renewable.

The driver must be otherwise qualified under 49 CFR 391.41(b)(8) or hold another valid medical exemption to legally operate a commercial motor vehicle in interstate commerce. Provisions of the seizure exemption include criteria that must be met. The driver must meet the following conditions to be considered:

Seizure disorder/Epilepsy diagnosis: The driver should be seizure-free for 8 years, on or off medication. If the driver is taking anti-seizure medication(s), the plan for medication should be stable for a period of 2 years. Stable means no changes in medication, dosage, or frequency of medication administration. Recertification for drivers with an epilepsy diagnosis should be performed every year.

Single unprovoked seizure: If there is a single unprovoked seizure (i.e., there is no known trigger for the seizure), the driver should be seizure-free for 4 years, on or off medication. If the driver is taking anti-seizure medication (s), the plan for medication should be stable for 2 years. Recertification for drivers with a single unprovoked seizure should be performed every 2 years.

Single provoked seizure: If there is a single unprovoked seizure (i.e. there is a known reason for the seizure), the Agency will consider specific criteria that fall into the following two categories; low risk factors for recurrence and moderate-to-high risk factors for recurrence

Examples of low-risk factors for recurrence include:

- Seizures caused by medications
- A non-penetrating head injury with loss of consciousness < or = to 30 minutes
- A brief loss of consciousness not likely to recur while driving
- Metabolic derangement not likely to recur
- Seizures caused by alcohol or illicit drug withdrawal

Examples of high-risk factors for recurrence include:

- A non-penetrating head injury with loss of consciousness or amnesia greater than 30 minutes, or a penetrating head injury
- Intracerebral hemorrhage associated with a stroke or trauma

- Infections
- Intracranial hemorrhage
- Post-operative complications from brain surgery with significant brain hemorrhage
- Brain tumor
- Stroke

The motor carrier is responsible for ensuring that the driver has the required documentation before driving a commercial vehicle. The driver is responsible for carrying both the seizure exemption and the medical examiner's certificate while driving and keeping both current**.**

https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/mission/advisory-committees/mrb/83431/seizure-exemption-application.pdf

Skill Performance Evaluation

Fixed Deficit of an Extremity

When the loss of (hand, foot, leg, or arm) or a fixed impairment to an extremity may interfere with the ability of the driver to operate a commercial motor vehicle (CMV) safely, you are responsible for determining if the driver is otherwise medically fit to drive. A driver may be allowed to drive if the qualification requirements for a Skill Performance Evaluation (SPE) certificate under 49 CFR 391.49 are met.

In order to legally operate a CMV, the driver must carry an SPE certificate and a valid medical examiner's certificate. The driver is responsible for ensuring that both certificates are renewed prior to expiration. The SPE certificate is good for up to 2 years and can be renewed.

https://www.fmcsa.dot.gov/regulations/medical/skill-performance-evaluation-certificate-application-new-driver-application