NFPA 1582
Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians

2000 Edition

National Fire Protection Association, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101
An International Codes and Standards Organization

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Standard on

Medical Requirements for Fire Fighters and Information for Fire Department Physicians

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This edition of NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, was prepared by the Technical Committee on Fire Service Occupational Medical and Health, and acted on by the National Fire Protection Association, Inc., at its November Meeting held November 14–17, 1999, in New Orleans, LA. It was issued by the Standards Council on January 14, 2000, with an effective date of February 11, 2000, and supersedes all previous editions.

This edition of NFPA 1582 was approved as an American National Standard on February 11, 2000.

Origin and Development of NFPA 1582

A joint task force of members representing both the Technical Committees on Fire Service Occupational Safety and Health and Fire Fighter Professional Qualifications began addressing medical requirements for fire fighters in March 1988. A standing subcommittee on Medical/Physical Requirements for Fire Fighters was created under the Fire Service Occupational Safety and Health Committee in 1990 and was responsible for the development of NFPA 1582.

This new document covered the medical requirements necessary for persons who perform fire-fighting tasks. Medical requirements that were previously contained in Section 2-2 of NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, applied only to the entry level. They were deleted from NFPA 1001. Legal opinion and federal laws show that requirements set for a position must apply to anyone who would be or is in that position. These medical requirements are therefore intended to apply to candidates as well as to current fire fighters.

Two categories of medical conditions were created, Categories A and B. Category A represented conditions that, if they exist in the candidate or current fire fighter, would not allow this person to perform fire-fighting operations. Category B conditions must be evaluated on a case-by-case basis so that the fire department physician can determine if the medical condition in a particular candidate or current fire fighter would prevent that person from performing fire-fighting operations.

Medical evaluations, medical examinations, record keeping, and confidentiality were addressed in Chapter 2. Chapter 3 contained the actual medical conditions that comprise the requirements.

Extensive advisory and informational material was developed in the appendixes to aid fire department administrators and fire department physicians.

The committee completed its work in January 1992, and the first edition was presented to the Association membership at the 1992 Annual Meeting in New Orleans, Louisiana.

The second edition of this standard reflected the numerous changes in medical technology that have impacted structural fire fighters. The technical committee was assisted by physicians whose expertise covered the areas of emergency medicine; vision; hearing; and cardiac, pulmonary, neurological, and metabolic conditions.

The technical committee endeavored to update six critical areas and moved some of the previous Category A text to Category B. They then enhanced some of the Category A material that would prohibit an individual from being hired or to continue as a fire fighter. The committee also added additional appendix text in the areas of ADA requirements, explanatory material for both fire department administrators and fire department physicians, and sample physician checklist forms.

Additional explanatory material was added or enhanced to provide the user with additional information regarding medical conditions whose categories were changed. These included a number of cardiac conditions, diabetic conditions, seizure disorders, asthma, and therapeutic anti-coagulation.

The 2000 edition of this standard reflects (1) the technical committee's recognition that medical technology is continually changing and (2) the committee's effort to incorporate those medical technology changes within the standard. Just as the committee recognizes medical technology advances, it is incumbent on the fire department to communicate with the fire department physician changes in the essential function(s) the fire department performs. Conversely, the fire department physician must keep the fire department updated on the latest changes in the medical field.

Fire department physicians are the primary users of NFPA 1582. Committee members feel that allowing the fire department physician more latitude in determination of a member's ability to perform essential functions will assist users in enforcing the standard. Therefore, the committee has changed the title of the standard to NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians.*

The topic of incident scene rehabilitation and accountability are included in this edition, since the fire department physician may provide guidance or assistance at the rehabilitation unit. In addition, specific areas concerning the following conditions were clarified or expanded: cardiac, vision, hearing, neurological, and metabolic.

An appendix was added to this edition comparing the requirements of this standard with those of 29 *CFR* 1910.134, the OSHA respiratory protection regulation. There are many users of both documents, and this appendix clarifies the companion areas of each.

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This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on occupational medicine and health in the working environment of the fire service.

Contents

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Appendix A.

Information on referenced publications can be found in Chapter 6 and Appendix F.

Chapter 1 Administration

1-1 Scope.

1-1.1 This standard shall contain medical requirements for members, including full-time or part-time employees and paid or unpaid volunteers. It also shall provide information for physicians regarding other areas of fire department medicine, including infection control and fireground rehabilitation.

1-1.2 These requirements are applicable to public, governmental, military, private, and industrial fire department organizations providing rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, and other emergency services.

1-1.3 This standard shall not apply to industrial fire brigades that also can be known as emergency brigades, emergency response teams, fire teams, plant emergency organizations, or mine emergency response teams.

1-2 Purpose.

1-2.1 The purpose of this standard shall be to specify minimum medical requirements for candidates and current members. It also shall provide other information regarding fire department activities that assist the department physician in providing proper medical support for members.

1-2.2* The implementation of the medical requirements outlined in this standard shall help ensure that candidates and current members are medically capable of performing their required duties and shall help to reduce the risk of occupational injuries and illnesses.

1-2.3 Nothing herein shall be intended to restrict any jurisdiction from exceeding these minimum requirements.

1-3 Implementation.

1-3.1 For candidates, the medical requirements of this standard shall be implemented when this standard is adopted by an authority having jurisdiction, on an effective date specified by the authority having jurisdiction.

1-3.2* When this standard is adopted by a jurisdiction, the authority having jurisdiction shall set a date or dates for current members to achieve compliance with the requirements of this standard and shall be permitted to establish a phase-in schedule for compliance with specific requirements of this standard in order to minimize personal and departmental disruption.

1-4 Definitions.

1-4.1* **Approved.** Acceptable to the authority having jurisdiction.

1-4.2* **Authority Having Jurisdiction.** The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

1-4.3* **Candidate.** A person who has made application to commence performance as a member.

1-4.4 Category A Medical Condition. A medical condition that would preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others.

1-4.5 Category B Medical Condition. A medical condition that, based on its severity or degree, could preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others.

1-4.6 Drug. Any substance, chemical, over-the-counter medication, or prescribed medication that could affect the performance of the member.

1-4.7 Essential Job Function. Task or assigned duty that is critical to successful performance of the job.

1-4.8 Evaluation. See Medical Evaluation.

1-4.9 Exposure Incident. A specific eye, mouth, or other mucous membrane, non-intact skin, or parenteral contact with blood, body fluids, or other potentially infectious materials, or inhalation of airborne pathogens, ingestion of foodborne pathogens or toxins.

1-4.10 Fire Department Physician. The licensed doctor of medicine or osteopathy who has been designated by the fire department to provide professional expertise in the areas of occupational safety and health as they relate to emergency services.

1-4.11 Functional Capacity Evaluation. An assessment of the correlation between that individual's capabilities and the essential job functions.

1-4.12 Health and Fitness Coordinator. The person who, under the supervision of the fire department physician, has been designated by the department to coordinate and be responsible for the health and fitness programs of the department.

1-4.13 Health and Safety Officer. The member of the fire department assigned and authorized by the fire chief as the manager of the safety and health program and who performs the duties and responsibilities specified in this standard. This individual can be the incident safety officer or that can also be a separate function.

1-4.14 Infection Control Officer. The person or persons within the fire department who are responsible for managing the department infection control program and for coordinating efforts surrounding the investigation of an exposure.

1-4.15 Infection Control Program. The fire department's formal program relating to the control of infectious and communicable disease hazards where employees, patients, or the general public could be exposed to blood, body fluids, or other potentially infectious materials in the fire department work environment. This program includes, but is not limited to, implementation of written policies and standard operating procedures regarding exposure follow-up measures, immunizations, members' health screening programs, and educational programs.

1-4.16 Medical Evaluation. The analysis of information for the purpose of making a determination of medical certification. Medical evaluation can include a medical examination.

1-4.17 Medical Examination. An examination performed or directed by the fire department physician.

1-4.18 Medical Services, Emergency. The provision of treatment—such as first aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other pre-hospital procedures including ambulance transportation—to patients.

1-4.19 Medically Certified. A determination by the fire department physician that the candidate or current member meets the medical requirements of this standard.

1-4.20* Member. A person involved in performing the duties and responsibilities of a fire department, under the auspices of the organization. A fire department member can be a full-time or part-time employee or a paid or unpaid volunteer, can occupy any position or rank within the fire department, and can engage in emergency operations.

1-4.20.1 Member, Current. A person who is already a member and whose duties require the performance of essential fire-fighting functions.

1-4.21 Shall. Indicates a mandatory requirement.

1-4.22 Should. Indicates a recommendation or that which is advised but not required.

1-4.23 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

1-4.24 Tactical Level Management Component (TLMC). A management unit identified in the incident management system commonly known as "division," "group," or "sector."

Chapter 2 Medical Process

2-1 Medical Evaluation Process.

2-1.1* The fire department shall establish and implement a medical evaluation process for candidates and current members.

2-1.2 The medical evaluation process shall include preplacement medical evaluations, periodic medical evaluations, and return-to-duty medical evaluations.

2-1.3 The fire department shall ensure that the medical evaluation process and all medical evaluations meet all of the requirements of Section 2-1.

2-1.4 Each candidate or current member shall cooperate, participate, and comply with the medical evaluation process and shall provide complete and accurate information to the fire department physician.

2-1.5* Each candidate or current member shall report, on a timely basis, to the fire department physician any exposure or medical condition that could interfere with the ability of the individual to perform as a member.

2-1.6 The medical evaluation shall be at no cost to the candidate, current member, or other member.

2-2 Fire Department Roles.

2-2.1 The fire department shall have an officially designated physician who shall be responsible for guiding, directing, and advising the members with regard to their health, fitness, and suitability for duty as required by NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*.

2-2.2* The fire department physician shall be a licensed doctor of medicine or osteopathy.

2-2.3* For the purpose of conducting medical evaluations, the fire department physician shall understand the physiological and psychological demands placed on members and shall understand the environmental conditions under which members must perform. The fire department shall provide the fire department physician with a current job description for all fire department positions and ranks.

2-2.4 The fire department shall require that the fire department health and safety officer and the health and fitness coordinator maintain a liaison with the fire department physician to ensure that the health maintenance process for the fire department is maintained.

2-2.5 Fire Department Physician Roles.

2-2.5.1 The fire department physician shall evaluate the person to ascertain the presence of any medical conditions listed in this standard.

2-2.5.2 When medical evaluations are conducted by a physician other than the fire department physician, the evaluation shall be reviewed and approved by the fire department physician.

2-3* Preplacement Medical Evaluation.

2-3.1 The candidate shall be certified by the fire department physician as meeting the medical requirements of Chapter 3 of this standard prior to entering into a training program to become a member or performing in an emergency operational environment as a member.

2-3.2 The candidate shall be evaluated according to the medical requirements of Chapter 3 of this standard to assess the effect of medical conditions on the candidate's ability to perform as a member.

2-3.3 A candidate shall not be certified as meeting the medical requirements of this standard if the fire department physician determines that the candidate has any Category A medical condition as specified in Chapter 3 of this standard.

2-3.4* A candidate shall not be certified as meeting the medical requirements of this standard if the fire department physician determines that the candidate has a Category B medical condition as specified in Chapter 3 of this standard that is of sufficient severity to prevent the candidate from performing, with or without reasonable accommodation, the essential functions of a member without posing a significant risk to the safety and health of the candidate or others.

2-3.4.1 The determination of whether a reasonable accommodation shall be made by the authority having jurisdiction in conjunction with the fire department physician.

2-3.5 If the candidate presents with an acute medical problem or newly acquired chronic medical condition that interferes with the candidate's ability to perform the functions of a member, medical certification shall be postponed until that person

has recovered from this condition and presents to the fire department for review.

2-4* Periodic Medical Evaluation.

2-4.1 The current member shall be certified annually, or at the request of either the fire department or the member, by the fire department physician as meeting the medical requirements of Chapter 3 of this standard in order to determine that member's medical ability to continue participating in a training or emergency operational environment as a member. Any applicable OSHA standards, such as 29 *CFR* 1910.120, "Hazardous Waste Operations and Emergency Response," 29 *CFR* 1910.134, "Respiratory Protection," 29 *CFR* 1910.95, "Occupational Noise Exposure," and 29 *CFR* 1910.1030, "Bloodborne Pathogens," shall be followed.

2-4.1.1 The components of the annual medical evaluation as specified in 2-4.1.2 shall be permitted to be performed by qualified personnel as authorized by the fire department physician. When other qualified personnel are used, the fire department physician shall review the data gathered during the evaluation.

2-4.1.2 The annual medical evaluation shall consist of the following:

(1) An interval medical history
(2) An interval occupational history, including significant exposures
(3) Height and weight
(4) Blood pressure
(5) Heart rate and rhythm

2-4.1.3* In addition to the annual medical evaluation, the fire department shall include a medical examination according to the following schedule:

(1) Ages 29 and under — at least every 3 years
(2) Ages 30 to 39 — at least every 2 years
(3) Ages 40 and above — every year

2-4.1.4* The medical examination shall include examination of the following components:

(1) Vital signs — namely, pulse, respiration, blood pressure, and, if indicated, temperature
(2) Dermatological system
(3) Ears, eyes, nose, mouth, throat
(4) Cardiovascular system
(5) Respiratory system
(6) Gastrointestinal system
(7) Genitourinary system
(8) Endocrine and metabolic systems
(9) Musculoskeletal system
(10) Neurological system
(11) Audiometry
(12) Visual acuity and peripheral vision testing
(13) Pulmonary function testing
(14) Laboratory testing, if indicated
(15) Diagnostic imaging, if indicated
(16) Electrocardiography, if indicated

2-4.2 A current member shall not be certified as meeting the medical requirements of this standard if the fire department physician determines that the member has any Category A medical condition specified in Chapter 3 of this standard.

2-4.3* A current member shall not be certified as meeting the medical requirements of this standard if the fire department physician determines that the member has a Category B condition specified in Chapter 3 of this standard that is of sufficient severity to prevent the member from performing, with or without reasonable accommodation, the essential functions of a member without posing a significant risk to the safety and health of the member or others.

2-4.3.1 The determination of reasonable accommodation shall be made by the authority having jurisdiction in conjunction with the fire department physician.

2-4.4 If the current member presents with an acute illness or recently acquired chronic medical condition, the evaluation shall be deferred until the member has recovered from the condition and presents to the fire department to return to duty.

2-5 Return-to-Duty Medical Evaluation.

2-5.1* A current member who has been absent from duty for a medical condition of a nature or duration that could affect performance as a member shall be evaluated by the fire department physician before returning to duty.

2-5.2 The fire department physician shall not medically certify the current member for return to duty if any Category A medical condition specified in Chapter 3 of this standard is present.

2-5.3* The fire department physician shall not medically certify the current member for return to duty if any Category B medical condition specified in Chapter 3 of this standard is present that is determined to be severe enough to affect the member's performance as a member. The fire department physician, in conjunction with the authority having jurisdiction, shall take into account the member's current duty assignment and alternative duty assignments or other programs that would allow a member to gradually return to full duty.

2-5.4* The department shall provide guidance, opportunity, and encouragement to the member so as to expedite his safe return to full duty.

2-6 Medical Evaluation Records, Results, Reporting, and Confidentiality.

2-6.1 All medical information collected as part of a medical evaluation shall be considered confidential medical information and shall be released by the fire department physician only with the specific written consent of the candidate or current member.

2-6.2 The fire department physician shall report the results of the medical evaluation to the candidate or current member, including any medical condition(s) disclosed during the medical evaluation, and the recommendation as to whether the candidate or current member is medically certified to perform as a member.

2-6.3 The fire department physician shall inform the fire department fire chief or designee only as to whether or not the candidate or current member is medically certified to perform as a member. The specific written consent of the candidate or current member shall be required in order to release confidential medical information regarding this condition to the fire department.

2-6.4 All medical record keeping shall comply with the requirements of 29 *CFR* 1910.20, "Medical Recordkeeping."

Chapter 3 Category A and Category B Medical Conditions

3-1 Medical Conditions Affecting Ability to Perform. Category A and Category B medical conditions shall help the examiner understand the type of condition that could result in rejection or acceptance. The medical conditions listed are organized by organ system. In the corresponding Appendix A explanatory material, a diagnostic example is often included with the list. In addition, the rationale for the rejection is presented in terms of the effect of the medical condition on the capability of the person to perform as a member.

3-2 Head and Neck.

3-2.1 Head.

3-2.1.1 There shall be no Category A medical conditions.

3-2.1.2* Category B medical conditions shall include the following:

(1) Deformities of the skull such as depressions or exostoses
(2) Deformities of the skull associated with evidence of disease of the brain, spinal cord, or peripheral nerves
(3) Loss or congenital absence of the bony substance of the skull
(4) Any other head condition that results in a person not being able to perform as a member

3-2.2 Neck.

3-2.2.1 There shall be no Category A medical conditions.

3-2.2.2* Category B medical conditions shall include the following:

(1) Thoracic outlet syndrome
(2) Congenital cysts, chronic draining fistulas, or similar lesions
(3) Contraction of neck muscles
(4) Any other neck condition that results in a person not being able to perform as a member

3-3 Eyes and Vision.

3-3.1* Category A medical conditions shall include the following:

(a) *Far visual acuity.* Far visual acuity shall be at least 20/30 binocular, corrected with contact lenses or spectacles. Far visual acuity uncorrected shall be at least 20/100 binocular for wearers of hard contacts or spectacles.

(b) *Peripheral vision.* Visual field performance without correction shall be 140 degrees in the horizontal meridian in each eye.

3-3.2* Category B medical conditions shall include the following:

(1) Diseases of the eye such as retinal detachment, progressive retinopathy, or optic neuritis
(2) Ophthalmological procedures such as radial keratotomy or repair of retinal detachment
(3) Any other eye condition that results in a person not being able to perform as a member

3-4 Ears and Hearing.

3-4.1 There shall be no Category A medical conditions.

3-4.2* Category B medical conditions shall include the following:

(a) Hearing deficit in the pure tone thresholds in the unaided worst ear that is

(1) Greater than 25 dB in three of the four frequencies
  a. 500 Hz
  b. 1000 Hz
  c. 2000 Hz
  d. 3000 Hz

OR

(2) Greater than 30 dB in any one of the three frequencies
  a. 500 Hz
  b. 1000 Hz
  c. 2000 Hz

AND

(3) In addition averages greater than 30 dB for the four frequencies
  a. 500 Hz
  b. 1000 Hz
  c. 2000 Hz
  d. 3000 Hz

(b) Unequal hearing loss
(c) Atresia, severe stenosis, or tumor of the auditory canal
(d) Severe external otitis
(e) Severe agenesis or traumatic deformity of the auricle
(f) Severe mastoiditis or surgical deformity of the mastoid
(g) Meniere's syndrome or labyrinthitis
(h) Otitis media
(i) Any other ear condition that results in a person not being able to perform as a member and results in a person being unable to pass a job-specific functional hearing task test or a hearing in noise test.

3-5 Dental.

3-5.1 There shall be no Category A medical conditions.

3-5.2* Category B medical conditions shall include the following:

(1) Diseases of the jaws or associated tissues
(2) Orthodontic appliances
(3) Oral tissues, extensive loss
(4) Relationship between the mandible and maxilla that precludes satisfactory postorthodontic replacement or ability to use protective equipment
(5) Any other dental condition that results in a person not being able to perform as a member

3-6 Nose, Oropharynx, Trachea, Esophagus, and Larynx.

3-6.1* Category A medical conditions shall include the following:

(1) Tracheostomy
(2) Aphonia

3-6.2* Category B medical conditions shall include the following:

(1) Congenital or acquired deformity
(2) Allergic respiratory disorder

(3) Sinusitis, recurrent
(4) Dysphonia
(5) Anosmia
(6) Any other nose, oropharynx, trachea, esophagus, or larynx condition that results in a person not being able to perform as a member or to communicate effectively

3-7 Lungs and Chest Wall.

3-7.1* Category A medical conditions shall include the following:

(1) Active hemoptysis
(2) Empyema
(3) Pulmonary hypertension
(4) Active tuberculosis

3-7.2* Category B medical conditions shall include the following:

(1) Pulmonary resectional surgery, chest wall surgery, pneumothorax
(2) Bronchial asthma or reactive airways disease
(3) Fibrothorax, chest wall deformity, diaphragm abnormalities
(4) Chronic obstructive airways disease
(5) Hypoxemic disorders
(6) Interstitial lung diseases
(7) Pulmonary vascular diseases, pulmonary embolism
(8) Bronchiectasis
(9) Infectious diseases of the lung or pleural space
(10) Any other pulmonary condition that results in a person not being able to perform as a member

3-8 Heart and Vascular System.

3-8.1 Heart.

3-8.1.1* Category A medical conditions shall include the following:

(1) Angina pectoris, current
(2) Heart failure, current
(3) Acute pericarditis, endocarditis, or myocarditis
(4) Syncope, recurrent
(5) Automatic implantable cardiac defibrillator

3-8.1.2* Category B medical conditions shall include the following:

(1) Significant valvular lesions of the heart, including prosthetic valves
(2) Coronary artery disease, including history of myocardial infarction, coronary artery bypass surgery, or coronary angioplasty, and similar procedures
(3) Atrial tachycardia, flutter, or fibrillation
(4) Left bundle branch block, second- and third-degree atrioventricular block
(5) Ventricular tachycardia
(6) Hypertrophy of the heart
(7) Recurrent paroxysmal tachycardia
(8) History of a congenital abnormality
(9) Chronic pericarditis, endocarditis, or myocarditis
(10) Cardiac pacemaker
(11) Coronary artery vasospasm
(12) Any other cardiac condition that results in a person not being able to perform as a member

3-8.2 Vascular System.

3-8.2.1 There shall be no Category A medical conditions.

3-8.2.2* Category B medical conditions shall include the following:

(1) Hypertension
(2) Peripheral vascular disease such as Raynaud's phenomenon
(3) Recurrent thrombophlebitis
(4) Chronic lymphedema due to lymphadenopathy or severe venous valvular incompetency
(5) Congenital or acquired lesions of the aorta or major vessels
(6) Marked circulatory instability as indicated by orthostatic hypotension, persistent tachycardia, and severe peripheral vasomotor disturbances
(7) Aneurysm of the heart or major vessel
(8) Any other vascular condition that results in a person not being able to perform as a member

3-9 Abdominal Organs and Gastrointestinal System.

3-9.1 There shall be no Category A conditions.

3-9.2* Category B medical conditions shall include the following:

(1) Cholecystitis
(2) Gastritis
(3) GI bleeding
(4) Acute hepatitis
(5) Hernia
(6) Inflammatory bowel disease
(7) Intestinal obstruction
(8) Pancreatitis
(9) Resection, bowel
(10) Ulcer, gastrointestinal
(11) Cirrhosis, hepatic or biliary
(12) Chronic active hepatitis
(13) Any other gastrointestinal condition that results in a person not being able to perform the duties of member

3-10 Genitourinary System.

3-10.1 Reproductive.

3-10.1.1 There shall be no Category A medical conditions.

3-10.1.2* Category B medical conditions shall include the following:

(1) Pregnancy, for its duration
(2) Dysmenorrhea
(3) Endometriosis, ovarian cysts, or other gynecologic conditions
(4) Testicular or epididymal mass
(5) Any other genital condition that results in a person not being able to perform as a member

3-10.2 Urinary System.

3-10.2.1 There shall be no Category A medical conditions.

3-10.2.2* Category B medical conditions shall include the following:

(1) Diseases of the kidney
(2) Diseases of the ureter, bladder, or prostate
(3) Any other urinary condition that results in a person not being able to perform as a member

3-11 Spine, Scapulae, Ribs, and Sacroiliac Joints.

3-11.1 There shall be no Category A medical conditions.

3-11.2* Category B medical conditions shall include the following:

(1) Arthritis
(2) Structural abnormality, fracture, or dislocation
(3) Nucleus pulposus, herniation of, or history of laminectomy, discectomy or fusion
(4) Ankylosing spondylitis
(5) Any other spinal condition that results in a person not being able to perform as a member

3-12 Extremities.

3-12.1 There shall be no Category A medical conditions.

3-12.2* Category B medical conditions shall include the following:

(1) Limitation of motion of a joint
(2) Amputation or deformity of a joint or limb
(3) Dislocation of a joint
(4) Joint reconstruction, ligamentous instability, or joint replacement
(5) Chronic osteoarthritis or traumatic arthritis
(6) Inflammatory arthritis
(7) Any other extremity condition that results in a person not being able to perform as a member

3-13 Neurological Disorders.

3-13.1* Category A medical conditions shall include the following:

(1) Ataxias of heredo-degenerative type
(2) Cerebral arteriosclerosis as evidenced by documented episodes of neurological impairment
(3) Multiple sclerosis with activity or evidence of progression within previous three years
(4) Progressive muscular dystrophy or atrophy
(5) All epileptic conditions to include simple partial, complex partial, generalized, and psychomotor seizure disorders other than those with complete control during previous five years, normal neurological examination, and definitive statement from qualified neurological specialist.

3-13.2 If an epileptic member experiences a five-year seizure-free interval resulting from a change in the medical regimen, that individual shall not be cleared for return to fire-fighting duty until he or she has completed five years without a seizure on the new regimen.

3-13.3* Category B medical conditions shall include the following:

(1) Congenital malformations
(2) Migraine
(3) Clinical disorders with paresis, paralysis, dyscoordination, deformity, abnormal motor activity, abnormality of sensation, or complaint of pain
(4) Subarachnoid or intracerebral hemorrhage
(5) Abnormalities from recent head injury such as severe cerebral contusion or concussion
(6) Any other neurological condition that results in a person not being able to perform as a member

3-14 Skin.

3-14.1 There shall be no Category A medical conditions.

3-14.2* Category B medical conditions shall include the following:

(1) Acne or inflammatory skin disease
(2) Eczema
(3) Any other dermatologic condition that results in the person not being able to perform as a member

3-15 Blood and Blood-Forming Organs.

3-15.1* Category A medical conditions shall include the following:

(1) Hemorrhagic states requiring replacement therapy
(2) Sickle cell disease (homozygous)

3-15.2* Category B medical conditions shall include the following:

(1) Anemia
(2) Leukopenia
(3) Polycythemia vera
(4) Splenomegaly
(5) History of thromboembolic disease
(6) Any other hematological condition that results in a person not being able to perform as a member

3-16 Endocrine and Metabolic Disorders.

3-16.1* Diabetes mellitus, which is treated with insulin or an oral hypoglycemic agent and where an individual has a history of one or more episodes of incapacitating hypoglycemia, shall be a Category A medical condition.

3-16.2* Category B medical conditions shall include the following:

(1) Diseases of the adrenal gland, pituitary gland, parathyroid gland, or thyroid gland of clinical significance
(2) Nutritional deficiency disease or metabolic disorder
(3) Diabetes mellitus requiring treatment with insulin or oral hypoglycemic agent without a history of incapacitating hypoglycemia
(4) Any other endocrine or metabolic condition that results in a person not being able to perform as a member

3-17 Systemic Diseases and Miscellaneous Conditions.

3-17.1 There shall be no Category A medical conditions.

3-17.2* Category B medical conditions shall include the following:

(1) Connective tissue disease, such as dermatomyositis, lupus erythematosus, scleroderma, and rheumatoid arthritis
(2) Residuals from past thermal injury
(3) Documented evidence of a predisposition to heat stress with recurrent episodes or resulting residual injury
(4) Any other systemic condition that results in a person not being able to perform as a member

3-18 Tumors and Malignant Diseases.

3-18.1 There shall be no Category A medical conditions.

3-18.2* Category B medical conditions shall include the following:

(1) Malignant disease that is newly diagnosed, untreated, or currently being treated.

a. Candidates shall be subject to the provisions of 2-3.5 of this standard.
b. Current members shall be subject to the provisions of 2-4.4 of this standard.

(2) Treated malignant disease that is evaluated on the basis of an individual's current physical condition and on the likelihood of the disease to recur or progress.
(3) Any other tumor or similar condition that results in a person not being able to perform as a member.

3-19 Psychiatric Conditions.

3-19.1 There shall be no Category A medical conditions.

3-19.2* Category B medical conditions shall include the following:

(1) A history of psychiatric condition or substance abuse problem
(2) Any other psychiatric condition that results in a person not being able to perform as a member

3-19.3 Candidates and current members shall be evaluated based on the individual's current condition.

3-20 Chemicals, Drugs, and Medications.

3-20.1 There shall be no Category A medical conditions.

3-20.2* Category B medical conditions shall include the use of the following:

(1) Anticoagulant agents
(2) Cardiovascular agents
(3) Narcotics
(4) Sedative-hypnotics
(5) Stimulants
(6) Psychoactive agents
(7) Steroids
(8) Any other chemical, drug, or medication that results in a person not being able to perform as a member

Chapter 4 Infectious Disease Program

4-1 Infection Control Program.

4-1.1 The fire department shall maintain infection control programs as delineated in NFPA 1581, *Standard on Fire Department Infection Control Program.*

4-1.2 The fire department physician shall maintain a liaison with the infection control officer as specified in NFPA 1581.

4-2 Exposure Incidents.

4-2.1* All blood and/or body fluid exposures shall be reported immediately, and medical assessment shall be provided within 2 hours of exposure. Medical assessment shall conform to current CDC guidelines.

4-2.2* All other exposure incidents shall be reported and assessment provided within 24 hours of exposure.

4-3 Tuberculosis.

4-3.1* The fire department shall provide a tuberculosis monitoring program that will test members at least annually and as indicated by CDC guidelines. Tuberculosis (TB) testing intervals shall conform to current CDC guidelines.

4-3.2* All members shall be evaluated according to current CDC guidelines following any tuberculosis exposure. These results shall be communicated to and reviewed by the fire department physician.

4-4* Immunizations. All members shall be immunized against infectious diseases as required by the authority having jurisdiction and by 29 *CFR* 1910.1030 "Bloodborne Pathogens." The fire department physician shall ensure that all members are offered currently recommended immunizations.

Chapter 5 Incident Scene Rehabilitation and Medical Treatment

5-1 Incident Scene Rehabilitation.

5-1.1* The fire department shall develop standard operating procedures that outline a systematic approach for the rehabilitation of members operating at incidents. Provisions addressed in these procedures shall include medical evaluation and treatment, food and fluid replenishment, crew rotation, and relief from extreme climatic conditions.

5-1.2* The incident commander shall consider the circumstances of each incident and initiate rest and rehabilitation of members in accordance with the fire department's standard operating procedures and with NFPA 1561, *Standard on Emergency Services Incident Management System.*

5-2 Incident Scene Safety and Health.

5-2.1 The incident safety officer shall ensure that the incident commander establishes an incident scene rehabilitation tactical level management component during emergency operations as required by NFPA 1521, *Standard for Fire Department Safety Officer.*

5-2.2* Transport capable emergency medical services (EMS) shall be available in the incident scene rehabilitation tactical level management component for evaluation and treatment of members. Basic life support (BLS) shall be the minimum level of available care. Advanced life support (ALS) care is preferable where it is available.

5-3 Evaluation and Triage of Member Injuries.

5-3.1 In the event of an injury to a member during emergency operations, EMS personnel shall assess and treat the injury based on local EMS protocol and fire department standard operating procedures.

5-3.2* Protocols and procedures guiding EMS providers caring for ill or injured members during emergency operations shall be developed by the EMS medical director in collaboration with the fire department physician and chief.

5-4 Incident Scene Rehabilitation Tactical Level Management Component.

5-4.1 The rehabilitation tactical level management component shall be designated per department standard operating procedures, such as large-scale incidents, long-duration incidents, or those associated with significant temperature extremes.

5-4.2 The rehabilitation tactical level management component shall be established in a safe environment away from the hazardous area of the incident.

5-4.3* The resources needed at the rehabilitation tactical level management component shall include an environment to limit temperature stress, medical equipment, and adequate medical staff.

5-4.4* Members shall be assigned to rehabilitation as prescribed by departmental standard operating procedures. Unusual circumstances, such as long-duration incidents, situations requiring heavy exertion, or severe weather extremes shall require an alteration in procedures.

5-4.5* Members arriving at rehabilitation shall be briefly questioned by medical staff about any symptoms of dehydration, heat stress, cold stress, physical exhaustion, and/or cardiopulmonary abnormalities. Any member having significant symptoms shall be moved to an area where assessment by advance life support personnel can be performed.

5-4.6 Members assigned to rehabilitation shall be encouraged to add/remove clothing to regain normal body temperature, drink fluids (water, electrolyte replacement drinks), and rest.

5-4.7 No member shall be reassigned to return to duty until medical evaluation and hydration has occurred for at least 10 minutes in rehabilitation and after being cleared by medical staff.

5-4.8 All members entering and leaving rehabilitation shall be properly assigned by the incident management system and be tracked through the personnel accountability system.

Chapter 6 Referenced Publications

6-1 The following documents or portions thereof are referenced within this standard as mandatory requirements and shall be considered part of the requirements of this standard. The edition indicated for each referenced mandatory document is the current edition as of the date of the NFPA issuance of this standard. Some of these mandatory documents might also be referenced in this standard for specific informational purposes and, therefore, are also listed in Appendix F.

6-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program,* 1997 edition.

NFPA 1521, *Standard for Fire Department Safety Officer,* 1997 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System,* 2000 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program,* 2000 edition.

6-1.2 U. S. Government Publications. U.S. Government Printing Office, Washington, DC 20401.

Title 29, *Code of Federal Regulations,* Part 1910.120, "Hazardous Waste Operations and Emergency Response," 1986.

Title 29, *Code of Federal Regulations,* Part 1910.134, "Respiratory Protection," 1998.

Title 29, *Code of Federal Regulations,* Part 1910.95, "Occupational Noise Exposure," 1980.

Title 29, *Code of Federal Regulations,* Part 1910.20, "Medical Recordkeeping," 1980.

Title 29, *Code of Federal Regulations,* Part 1910.1030, "Bloodborne Pathogens," 1995.

Appendix A Explanatory Material

Appendix A is not a part of the requirements of this NFPA document but is included for informational purposes only. This appendix contains explanatory material, numbered to correspond with the applicable text paragraphs.

A-1-2.2 There is a direct relationship between the medical requirements and the job description of members. The job description should include all essential job functions of members, both emergency and nonemergency. Members perform a variety of emergency operations including fire fighting, emergency medical care, hazardous materials mitigation, and special operations. Nonemergency duties can include, and are not limited to, training, station and vehicle maintenance, and physical fitness. Each fire department needs to identify and develop a written job description for members. Appendix C, Essential Fire-Fighting Functions, provides an example of essential job functions for members.

A-1-3.2 The specific determination of the authority having jurisdiction depends on the mechanism under which this standard is adopted and enforced. Where this standard is adopted voluntarily by a particular fire department for its own use, the authority having jurisdiction should be the fire chief or the political entity that is responsible for the operation of the fire department. Where this standard is legally adopted and enforced by a body having regulatory authority over a fire department, such as federal, state, or local government or political subdivision, this body is responsible for making those determinations as the authority having jurisdiction. The compliance program should take into account the services the fire department is required to provide, the financial resources available to the fire department, the availability of personnel, the availability of trainers, and such other factors as will affect the fire department's ability to achieve compliance.

A-1-4.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A-1-4.2 Authority Having Jurisdiction. The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the

commanding officer or departmental official may be the authority having jurisdiction.

A-1-4.3 Candidate. In an employment context, the Americans with Disabilities Act (discussed in further detail in Appendix D) requires that any medical examination to be conducted take place after an offer of employment is made and prior to the commencement of duties. Therefore, in the employment context, the definition of the term *candidate* should be applied so as to be consistent with that requirement.

Volunteer members have been deemed to be employees in some states or jurisdictions. Volunteer fire departments should seek legal counsel as to their legal responsibilities in these matters.

A-1-4.20 Member. See Appendix C, Essential Structural Fire-Fighting Functions.

A-2-1.1 See Appendix D, Guide for Fire Department Administrators.

A-2-1.5 Exposures and medical conditions that should be reported if they can interfere with the ability of the individual to perform as a member include, but are not limited to, the following:

(1) Exposures to hazardous materials or toxic substances
(2) Exposure to infectious or contagious diseases
(3) Illness or injury
(4) Use of prescription or nonprescription drugs
(5) Pregnancy

A-2-2.2 See Appendix D, Section D-2, Choosing a Fire Department Physician.

A-2-2.3 See Appendix B, Information for Fire Department Physicians. Appendix C, Essential Structural Fire-Fighting Functions provides a generic description of job tasks performed by members. A fire department needs to provide the fire department physician with a job description of all positions and ranks so that the fire department physician can understand the physical and mental demands placed upon all members regardless of position or rank. Appendix D, Guide for Fire Department Administrators, also provides guidance for ensuring that the fire department physician is provided with this information.

A-2-3 See Appendix B, Section B-3, Guidance for Medical Evaluations.

A-2-3.4 See Appendix D, Section D-1, Legal Considerations in Applying the Standard.

A-2-4 See Appendix B, Section B-3, Guidance for Medical Evaluations.

A-2-4.1.3 At the discretion of the fire department physician, an examination can be performed sooner than would be expected from the schedule given in 2-4.1.3. Current medical conditions and coronary risk factors could mandate more frequent medical examinations.

A-2-4.1.4 See Appendix B, Guide for Fire Department Physicians.

A-2-4.3 See Appendix D, Section D-1, Legal Considerations in Applying the Standard.

A-2-5.1 A department should set protocols regarding length of time absent from duty and/or medical conditions that require the department physician to evaluate a member.

A-2-5.3 See Appendix D, Section D-1, Legal Considerations in Applying the Standard.

A-2-5.4 Physical therapy, strength training, work hardening, functional capacity evaluations, and alternate duty are all activities that can be helpful.

A-3-2.1.2 Category B medical conditions of the head include the following:

(1) Deformities of the skull, such as depressions or exostoses, of a degree that interferes with the use of protective equipment. Deformities of the skull can result in the member's inability to properly wear protective equipment.
(2) Deformities of the skull associated with evidence of disease of the brain, spinal cord, or peripheral nerves. These deformities can result in the potential for sudden incapacitation, the inability to properly wear protective equipment, and the inability to communicate effectively due to oropharyngeal dysfunction.
(3) Loss of or congenital absence of the bony substance of the skull (if associated with disease interfering with performance or if appropriate protection cannot be provided for the area without interfering with protective equipment and vision). Loss of or congenital absence of the bony substance of the skull can result in the inability to properly wear protective equipment and the inability to communicate effectively due to oropharyngeal dysfunction.
(4) Any other head condition that results in a person not being able to perform as a member.

A-3-2.2.2 Category B medical conditions of the neck include the following:

(1) Thoracic outlet syndrome (symptomatic). Thoracic outlet syndrome can result in frequent episodes of pain or inability to perform work.
(2) Congenital cysts, chronic draining fistulas, or similar lesions (if lesions or underlying disease interferes with performance). Congenital cysts, chronic draining fistulas, or similar lesions can result in the inability to properly wear protective equipment, and the inability to communicate effectively due to oropharyngeal dysfunction.
(3) Contraction of neck muscles (if it interferes with wearing of protective equipment or ability to perform duties). The contraction of neck muscles can result in the inability to properly wear protective equipment, and the inability to perform functions as a member due to limitation of flexibility.
(4) Any other neck condition that results in a person not being able to perform as a member.

A-3-3.1 Category A medical conditions of the eyes and vision include the following:

(1) *Far visual acuity.* Far visual acuity is at least 20/30 binocular, corrected with contact lenses or spectacles. Far visual acuity uncorrected is at least 20/100 binocular for wearers of hard contacts or spectacles. Successful long-term soft contact lens wearers (that is, six months without a problem) are not subject to the uncorrected standard. Inadequate far visual acuity can result in the failure to be able to read placards and street signs or to see and respond to imminently hazardous situations.
(2) *Peripheral vision.* Visual field performance without correction is 140 degrees in the horizontal meridian in each eye. (Members cannot have just monocular vision.)

Monocular vision can result in sudden incapacitation when debris is lodged in one eye. Inadequate or compromised peripheral vision can result in the following:

a. Failure to perform job duties and maintain visual contact with a partner
b. Inability to maintain safety near moving objects
c. Poor balance on uneven surfaces
d. Unsuccessful performance in environments where visual cues are critical to personal safety

A-3-3.2 Category B medical conditions of the eyes and vision include the following:

(1) Diseases of the eye such as retinal detachment, progressive retinopathy, or optic neuritis (severe or progressive). These diseases of the eye can result in the failure to read placards and street signs or to see and respond to imminently hazardous situations.
(2) Ophthalmological procedures such as radial keratotomy and repair of retinal detachment. With retinal detachment, sufficient time (1-2 weeks for radial keratonomy and Lasik-type surgeries, three months for retinal detachment) must have passed to allow stabilization of visual acuity and to ensure that there are no postsurgical complications. These ophthalmological procedures may result in the failure to be able to read placards and street signs or to see and respond to imminently hazardous situations.
(3) Any other eye condition that results in a person not being able to perform as a member. Persons with severe color vision loss will likely fail the acuity requirement.

Formerly, color vision deficiency was listed as a Category B medical condition. However, it is felt that within most cases this condition will not affect the ability of a member to perform the essential functions of his or her job. The fire service physician should consider the color vision deficiency of the individual and consider the color vision requirements of the member's job and reach an individual determination.

A-3-4.2 There are currently no hearing tests that will allow the fire department physician to accurately predict whether the fire fighter will adequately be able to perform essential job duties. Job-specific hearing tests should be individualized for each department and its specific job functions. The following list of hearing-specific tasks can assist to direct development of hearing protocols.

(1) Understanding spoken commands, both over the radio and while wearing SCBA
(2) Hearing alarm signals, including building evacuation, low air signal on the SCBA, and PASS alarms
(3) Hearing and locating the source of calls for assistance from victims or other fire fighters

All of the above tasks will need to be performed with reasonably simulated incident scene background noise and SCBA noise. The inability to hear sounds of low intensity or to distinguish voice from background noise can lead to failure to respond to imminently hazardous situations. *(See also B-4.5.)*

Category B medical conditions of hearing include the following:

(a) Unequal hearing can result in the inability to localize sounds, leading to failure in the ability to perform search and rescue and other localization tasks.

(b) Severe external otitis, that is, recurrent loss of hearing can result in the inability to hear sounds of low intensity or to distinguish voice from background noise, leading to failure to respond to imminently hazardous situations.

(c) Severe agenesis or traumatic deformity of the auricle can result in the inability to properly wear protective equipment and the inability to hear sounds of low intensity or to distinguish voice from background noise, leading to failure to respond to imminently hazardous situations.

(d) Severe mastoiditis or surgical deformity of the mastoid can result in the inability to properly wear protective equipment and the inability to hear sounds of low intensity or to distinguish voice from background noise, leading to failure to respond to imminently hazardous situations.

(e) Meniere's syndrome or severe labyrinthitis may result in the potential for sudden incapacitation and the inability to perform job functions due to limitations of balance.

(f) Otitis media (chronic) can result in frequent episodes of pain or the inability to perform work and the inability to hear sounds of low intensity or to distinguish voice from background noise, leading to failure to respond to imminently hazardous situations.

(g) Any other ear condition that results in a person not being able to perform as a member can be classified as a Category B medical condition of hearing.

A-3-5.2 Category B dental medical conditions include the following:

(1) Diseases of the jaws or associated tissues (those that are incapacitating or preclude ability to use protective equipment). Diseases of the jaws or associated tissues can result in the inability to properly wear protective equipment.
(2) Orthodontic appliances (those that preclude the ability to use protective equipment). The wearing of orthodontic appliances can result in the inability to properly wear protective equipment.
(3) Oral tissues, extensive loss (that which precludes satisfactory postorthodontic replacement or ability to use protective equipment). Extensive loss of oral tissues may result in the inability to properly wear protective equipment and the inability to communicate effectively due to oropharyngeal dysfunction.
(4) Relationship between the mandible and maxilla that precludes satisfactory postorthodontic replacement or ability to use protective equipment. This condition can result in the inability to properly wear protective equipment and the inability to communicate effectively due to oropharyngeal dysfunction.
(5) Any other dental condition that results in a person not being able to perform as a member.

A-3-6.1 Category A medical conditions of the nose, oropharynx, trachea, esophagus, and larynx include the following:

(1) Tracheostomy. A tracheostomy can result in the inability to properly wear protective equipment, the inability to perform job functions due to limitations of endurance, and the inability to communicate effectively due to oropharyngeal dysfunction.
(2) Aphonia, regardless of cause. Aphonia can result in the inability to communicate effectively due to oropharyngeal dysfunction.

A-3-6.2 Category B medical conditions of the nose, oropharynx, trachea, esophagus, and larynx include the following:

(1) Congenital or acquired deformity that interferes with the ability to use protective equipment. A congenital or acquired deformity can result in the inability to properly wear protective equipment.
(2) Allergic respiratory disorder (uncontrolled). Allergic respiratory disorder can result in frequent episodes of pain, the inability to perform work, and the inability to perform functions as a member due to limitations of endurance.
(3) Sinusitis, recurrent (severe, requiring repeated hospitalizations or causing impairment). Recurrent sinusitis can result in frequent episodes of pain and the inability to perform work.
(4) Dysphonia (severe). Severe dysphonia can result in the inability to communicate effectively due to oropharyngeal dysfunction.
(5) Any other nose, oropharynx, trachea, esophagus, or larynx condition that results in a person not being able to perform as a member or to communicate effectively.

A-3-7.1 Category A medical conditions of the lungs and chest wall include active hemoptysis, empyema, pulmonary hypertension, and active tuberculosis. These conditions can result in the inability to perform functions as a member due to limitations of endurance.

A-3-7.2 Category B medical conditions of the lungs and chest wall include the following:

(1) Pulmonary resectional surgery, chest wall surgery, pneumothorax (that is, history of recurrent spontaneous pneumothorax). These conditions can result in the inability to perform functions as a member due to limitations of strength or endurance and may result in the potential for sudden incapacitation.
(2) Bronchial asthma or reactive airways disease (frequent medication use or symptoms caused by exposures to exertion, heat and cold, or products of combustion and other irritant inhalation). Bronchial asthma or reactive airways disease can result in frequent episodes of pain or the inability to perform work, the potential for sudden incapacitation, and the inability to perform functions as a member due to limitations of endurance.
(3) Fibrothorax, chest wall deformity, diaphragm abnormalities. Fibrothorax, chest wall deformity, and diaphragm abnormalities can result in the inability to perform functions as a member due to limitations of endurance.
(4) Chronic obstructive airways disease. Chronic obstructive airways disease can result in the inability to perform functions as a member due to limitations of endurance.
(5) Hypoxemic disorders. Hypoxemic disorders can result in the inability to perform functions as a member due to limitations of endurance.
(6) Interstitial lung diseases. Interstitial lung diseases can result in the inability to perform functions as a member due to limitations of endurance.
(7) Pulmonary vascular diseases, pulmonary embolism. Pulmonary vascular diseases and pulmonary embolism can result in frequent episodes of pain and the inability to perform functions as a member due to limitations of endurance.
(8) Bronchiectasis with significant residual impairment of pulmonary function or requiring frequent therapy. Bronchiectasis can result in the inability to perform functions as a member due to limitations of endurance.
(9) Infectious diseases of the lung or pleural space.
(10) Any other pulmonary condition that results in a person not being able to perform as a member.

A-3-8.1.1 Category A medical conditions of the heart and vascular system include the following:

(1) Angina pectoris, current. Angina pectoris can result in frequent episodes of pain or inability to perform work, progressive illness leading to functional impairment, and the potential for sudden incapacitation.
(2) Heart failure, current. Heart failure can result in frequent episodes of pain or inability to perform work, progressive illness leading to functional impairment, and the potential for sudden incapacitation.
(3) Acute pericarditis, endocarditis, or myocarditis. These conditions can result in frequent episodes of pain or the inability to perform work.
(4) Syncope, recurrent. Recurrent syncope can result in the potential for sudden incapacitation.
(5) Automatic implantable cardiac defibrillator. An automatic implantable cardiac defibrillator can result in the potential for sudden incapacitation.

A-3-8.1.2 Category B medical conditions of the heart and vascular system include the following:

(1) Significant valvular lesions of the heart, including prosthetic valves. Specific recommendations include the following:
    a. *Mitral stenosis.* Mitral stenosis is acceptable if in sinus rhythm and stenosis is mild, that is, valve area > 1.5 cm^2 or pulmonary artery systolic pressure < 35 mm Hg.
    b. *Mitral insufficiency.* Mitral insufficiency is acceptable if in sinus rhythm with normal left ventricular size and function.
    c. *Aortic stenosis.* Aortic stenosis is acceptable if stenosis is mild, that is, mean aortic valvular pressure gradient < 20 mm Hg.
    d. *Aortic regurgitation.* Aortic regurgitation is acceptable if left ventricular size is normal or slightly increased and systolic function is normal.
    e. *Prosthetic valves.* Prosthetic valves are acceptable unless full anticoagulation is in effect.
(2) Coronary artery disease, including history of myocardial infarction, coronary artery bypass surgery, coronary angioplasty, and similar procedures. Persons at mildly increased risk for sudden incapacitation are acceptable for fire fighting. Mildly increased risk is defined by the presence of each of the following:
    a. Normal left ventricular ejection fraction
    b. Normal exercise tolerance, > 10 metabolic equivalents (METS)
    c. Absence of exercise-induced ischemia by exercise testing
    d. Absence of exercise-induced complex ventricular arrhythmias
    e. Absence of hemodynamically significant stenosis on all major coronary arteries (≥50 percent lumen diameter narrowing), or successful myocardial revascularization
(3) Atrial tachycardia, flutter, or fibrillation
(4) Left bundle branch, second- and third-degree atrioventricular block. These blocks will result in disqualification unless exercise can be performed with an adequate heart rate response. They can result in frequent episodes of

pain, the inability to perform work, and have the potential for sudden incapacitation.

(5) Ventricular tachycardia. Ventricular tachycardia can result in the potential for sudden incapacitation and the inability to perform job functions due to limitations of strength or endurance.

(6) Hypertrophy of the heart. Hypertrophy of the heart can result in the potential for sudden incapacitation and the inability to perform job functions due to limitations of endurance.

(7) Recurrent paroxysmal tachycardia. Recurrent paroxysmal tachycardia can result in the potential for sudden incapacitation and the inability to perform job functions due to limitations of strength or endurance.

(8) History of a congenital abnormality that has been treated by surgery but with residual complications or that has not been treated by surgery, leaving residuals or complications. A congenital abnormality can result in frequent episodes of pain or inability to perform work and the potential for sudden incapacitation.

(9) Chronic pericarditis, endocarditis, or myocarditis. These conditions can result in the inability to perform job functions due to limitations of endurance.

(10) Cardiac pacemaker. If the person is pacemaker-dependent, then the risk for sudden failure due to trauma is not acceptable. Those with cardiac pacemakers can have the potential for sudden incapacitation.

(11) Coronary artery vasospasm. Those with cardiac artery vasospasm can have the potential for sudden incapacitation.

(12) Any other cardiac condition that results in a person not being able to perform as a member.

A-3-8.2.2 Category B medical conditions of the vascular system include the following:

(1) Hypertension that is uncontrolled, poorly controlled, or requires medication likely to interfere with the performance of duties. Acceptable hypertension is a blood pressure less than 180/100 and no target organ damage. Hypertension is a progressive illness leading to functional impairment with the potential for sudden incapacitation.

(2) Peripheral vascular disease, such as Raynaud's phenomenon, that interferes with performance of duties or makes the individual likely to have significant risk of severe injury. Peripheral vascular disease can result in frequent episodes of pain or the inability to perform work and the inability to perform functions as a member due to limitations of endurance.

(3) Recurrent thrombophlebitis. Recurrent thrombophlebitis can result in frequent episodes of pain or the inability to perform work and the inability to perform functions as a member due to limitations of endurance.

(4) Chronic lymphedema due to lymphopathy or severe venous valvular incompetency. Chronic lymphedema can result in the inability to perform functions as a member due to limitations of endurance.

(5) Congenital or acquired lesions of the aorta or major vessels, for example, syphilitic aortitis, demonstrable atherosclerosis that interferes with circulation, and congenital acquired dilatation of the aorta. Congenital or acquired lesions of the aorta or major vessels can result in the potential for sudden incapacitation and the inability to perform job functions due to limitations of endurance.

(6) Marked circulatory instability as indicated by orthostatic hypotension, persistent tachycardia, and severe peripheral vasomotor disturbances. Marked circulatory instability can result in the inability to perform job functions due to limitations of endurance and the inability to perform job functions due to limitations of balance.

(7) Aneurysm of the heart or major vessel, congenital or acquired. An aneurysm of the heart or major vessel can result in frequent episodes of pain, the inability to perform work, and the potential for sudden incapacitation.

(8) Any other vascular condition that results in a person not being able to perform as a member.

A-3-9.2 Category B medical conditions of the abdominal organs and gastrointestinal system include the following:

(1) Cholecystitis (that which causes frequent pain due to stones or infection). Cholecystitis can result in frequent episodes of pain or the inability to perform work.

(2) Gastritis (that which causes recurrent pain and impairment). Gastritis can result in frequent episodes of pain or the inability to perform work.

(3) GI bleeding can cause fatigue, and or hemodynamic instability resulting in inability to perform work.

(4) Acute hepatitis (until resolution of acute hepatitis as determined by clinical examination and appropriate laboratory testing). Acute hepatitis can result in frequent episodes of pain or the inability to perform work.

(5) Hernia (unrepaired inguinal or abdominal hernia that could obstruct during duty). A hernia can result in the potential for sudden incapacitation.

(6) Inflammatory bowel disease (that which causes disabling pain or diarrhea). Inflammatory bowel disease can result in frequent episodes of pain or the inability to perform work. It is a progressive illness leading to functional impairment.

(7) Intestinal obstruction (that is, recent obstruction with impairment). An intestinal obstruction can result in frequent episodes of pain, the inability to perform work, and the potential for sudden incapacitation.

(8) Pancreatitis (that is, chronic or recurrent with impairment). Pancreatitis can result in frequent episodes of pain or the inability to perform work.

(9) Resection, bowel (if frequent diarrhea precludes performance of duty). A bowel resection can result in frequent episodes of pain or the inability to perform work.

(10) Ulcer, gastrointestinal (where symptoms are uncontrolled by drugs or surgery). A gastrointestinal ulcer can result in frequent episodes of pain or the inability to perform work.

(11) Cirrhosis, hepatic or biliary (that which is symptomatic or in danger of bleeding). Cirrhosis can result in frequent episodes of pain or the inability to perform work.

(12) Chronic active hepatitis. Chronic, active hepatitis can result in frequent episodes of pain or the inability to perform work.

(13) Any other gastrointestinal condition that results in a person not being able to perform as a member.

A-3-10.1.2 Category B medical conditions of the reproductive organs include the following:

(1) Pregnancy. Pregnancy can result in frequent episodes of pain or the inability to perform work; progressive inability to perform work due to limitations of endurance, flexibility, or strength; and the inability to properly wear protective equipment. *(See B-4.4, Reproductive.)*

(2) Dysmenorrhea that leads to recurrent incapacitation. Dysmenorrhea can result in frequent episodes of pain or the inability to perform work.
(3) Endometriosis, ovarian cysts, or other gynecologic conditions (severe, leading to recurrent incapacitation). Endometriosis, ovarian cysts, and other gynecologic conditions can result in frequent episodes of pain or the inability to perform work.
(4) Testicular or epididymal mass (that which requires medical evaluation). A testicular or epididymal mass can result in frequent episodes of pain or the inability to perform work. This is a progressive illness leading to functional impairment.
(5) Any other genital condition that results in a person not being able to perform as a member.

A-3-10.2.2 Category B medical conditions of the urinary system include the following:

(1) Diseases of the kidney requiring dialysis. Diseases of the kidney can result in frequent episodes of pain or the inability to perform work. Kidney disease is a progressive illness leading to functional impairment.
(2) Diseases of the ureter, bladder, or prostate that require frequent or prolonged treatment. These diseases can result in frequent episodes of pain or the inability to perform work.
(3) Any other urinary condition that results in a person not being able to perform as a member.

A-3-11.2 Category B medical conditions of the spine, scapulae, ribs, and sacroiliac joints include the following:

(1) Arthritis that results in progressive impairment or limitation of movement. Arthritis is a progressive illness that leads to functional impairment. Arthritis can result in the inability to perform functions as a member due to limitations of endurance or flexibility.
(2) Structural abnormality, fracture, or dislocation that is a progressive or recurrent impairment. These conditions are progressive illnesses leading to functional impairment. These illnesses can result in the inability to perform functions as a member due to limitations of strength or flexibility.
(3) Nucleus pulposus, herniation of, or history of laminectomy, discectomy, or fusion. These conditions are progressive illnesses leading to functional impairment and the inability to properly wear protective equipment.
(4) Ankylosing spondylitis. This condition can result in the inability to perform functions as a member due to limitations of endurance or flexibility.
(5) Any other spinal condition that results in a person not being able to perform as a member.

A-3-12.2 Category B medical conditions of the extremities include the following:

(1) Limitation of motion of a joint of a degree to interfere with successful and safe performance of fire-fighting duties. The limitation of motion of a joint can result in the inability to perform functions as a member due to limitation of flexibility.
(2) Amputation or deformity of a joint or limb of a degree to interfere with successful and safe performance of fire-fighting duties. The amputation or deformity of a joint or limb can result in the inability to perform functions as a member due to limitations of strength and/or balance.
(3) Dislocation of a joint. Recurrent dislocation of a joint or dislocation with residual limitation of motion of a degree to interfere with successful and safe performance of fire-fighting duties; successful surgery for recurrent shoulder dislocation, if range of motion is intact, would not exclude a person. Dislocation of a joint can result in the inability to perform functions as a member due to limitations of strength or flexibility.
(4) Joint reconstruction, ligamentous instability, or joint replacement. In cases where recurrent or with residual limitation of motion of a degree to interfere with successful and safe performance of fire-fighting duties, surgery for a torn anterior cruciate ligament could disqualify if quadricep strength is not normal or if the knee is lax or develops pain or swelling when stressed. These conditions of the joint can result in the inability to perform functions as a member due to limitations of strength or flexibility.
(5) Chronic osteoarthritis or traumatic arthritis (in cases where recurrent exacerbations leads to impairment). Chronic osteoarthritis or traumatic arthritis can result in frequent episodes of pain, the inability to perform work, and the inability to perform functions as a member due to limitations of strength, endurance, or flexibility.
(6) Inflammatory arthritis (in cases where it is severely recurrent or a progressive illness or with deformity or limitation of range of motion of a degree to interfere with successful and safe performance of fire-fighting duties). Inflammatory arthritis can result in frequent episodes of pain, the inability to perform work, and the inability to perform functions as a member due to limitations of strength, endurance, or flexibility.
(7) Any other extremity condition that results in a person not being able to perform as a member.

A-3-13.1 Category A medical conditions of a neurological nature include the following:

(a) Ataxias of the heredo-degenerative type. Ataxias of the heredo-degenerative type can result in the inability to perform functions as a member due to limitations of balance.

(b) Cerebral arteriosclerosis as evidenced by documented episodes of neurological impairment. Cerebral arteriosclerosis can result in the inability to perform functions as a member due to limitations of strength and/or balance.

(c) Progressive multiple sclerosis or multiple sclerosis with evidence of progression within previous three years. Multiple sclerosis can result in the inability to perform functions as a member due to limitations of strength or flexibility.

(d) Progressive muscular dystrophy or atrophy. This condition can result in the inability to perform functions as a member due to limitations of strength and/or balance.

(e) Epileptic conditions. After a provoked seizure, with the precipitant identified and alleviated, with subsequent normal CT or MRI scan, normal EEG, normal neurological exam, free of recurrence without medication for one year, and with definitive statement from a qualified neurological specialist, a member can be cleared to return to duty.

A-3-13.3 Category B medical conditions of a neurological nature include the following:

(a) Congenital malformations (that is, severe vascular malformations that interfere with the ability to wear protective equipment). Congenital malformations can result in the inability to properly wear protective equipment.

(b) Migraine (that is, recurrent, with impairment uncontrolled). Migraines can result in frequent episodes of pain or the inability to perform work.

(c) Clinical disorders with paresis, paralysis, dyscoordination, deformity, abnormal motor activity, abnormality of sensation, or complaint of pain (progressive or severe). These disorders are progressive illnesses leading to functional impairment. They can result in the inability to perform functions as a member due to limitations of strength, flexibility, or balance.

(d) Subarachnoid or intracerebral hemorrhage, verified either clinically or by laboratory studies, except for those corrected with verification by laboratory studies and report of treating physician. Subarachnoid or intracerebral hemorrhage is a progressive illness leading to functional impairment. This illness can result in the potential for sudden incapacitation.

(e) Abnormalities from recent head injury, such as severe cerebral contusion or concussion. The abnormalities can result in the potential for sudden incapacitation.

(f) Any other neurological condition that results in a person not being able to perform as a member.

A-3-14.2 Category B medical conditions of the skin include the following:

(a) Acne or inflammatory skin disease (if condition precludes good fit of protective equipment, such as SCBA face piece, or prevents shaving). Acne or inflammatory skin disease can result in the inability to properly wear protective equipment.

(b) Eczema (if broken skin results in impairment from infections or pain or interferes with seal between skin and personal protective equipment). Eczema can result in frequent episodes of pain or the inability to perform work.

(c) Any other dermatologic condition that results in the person not being able to perform as a member.

A-3-15.1 Category A medical conditions of blood and blood-forming organs includes the following:

(a) Hemorrhagic states requiring replacement therapy (for example, von Willebrand's disease, thrombocytopenia, hemophilia). These hemorrhagic states can result in frequent episodes of pain or the inability to perform work.

(b) Sickle cell disease (homozygous). Sickle cell disease can result in frequent episodes of pain or the inability to perform work and the potential for sudden incapacitation.

A-3-15.2 Category B medical conditions of blood and blood-forming organs include the following:

(a) Anemia (in cases that require regular transfusions). Anemia can result in frequent episodes of pain or the inability to perform work. Anemia is a progressive illness leading to functional impairment.

(b) Leukopenia (where chronic and indicative of serious illness). Leukopenia is a progressive illness leading to functional impairment.

(c) Polycythemia vera (where severe, requiring treatment). Polycythemia vera can result in frequent episodes of pain or the inability to perform work and the potential for sudden incapacitation.

(d) Splenomegaly (where the spleen is susceptible to rupture from blunt trauma). Splenomegaly can result in the potential for sudden incapacitation.

(e) History of thromboembolic disease (that is, more than one episode or an underlying condition). A history of thromboembolic disease can result in the potential for sudden incapacitation.

(f) Any other hematological condition that results in a person not being able to perform as a member.

A-3-16.1 Category A medical conditions of endocrine and metabolic disorders include diabetes mellitus that is treated with insulin or an oral hypoglycemic agent and that includes a history of one or more episodes of incapacitating hypoglycemia. Diabetes mellitus can result in the potential for sudden incapacitation.

A-3-16.2 Category B medical conditions of endocrine and metabolic disorders includes the following:

(a) Diseases of the adrenal gland, pituitary gland, parathyroid gland, or thyroid gland of clinical significance (that is, symptomatic and poorly controlled). These diseases can result in frequent episodes of pain, the inability to perform work, and the potential for sudden incapacitation.

(b) Nutritional deficiency disease or metabolic disorder (where clinically significant and not correctable by replacement therapy or other medication). Nutritional deficiency disease or metabolic disorder can result in frequent episodes of pain or the inability to perform work.

(c) Diabetes mellitus requiring treatment with insulin or oral hypoglycemic agent. Diabetes mellitus can result in episodes of pain or inability to perform work. It is a progressive illness leading to functional impairment and can result in the potential for sudden incapacitation.

(d) Any other endocrine or metabolic condition that results in a person not being able to perform as a member.

A-3-17.2 Category B medical conditions of systemic diseases and miscellaneous conditions include the following:

(a) Connective tissue disease, such as dermatomyositis, lupus erythematosus, scleroderma, and rheumatoid arthritis (where manifested by systemic impairment or limitations of motion). These connective tissue diseases are progressive illnesses leading to functional impairment and the inability to function as a member due to limitations of strength or flexibility.

(b) Residuals from past thermal injury (for example, frostbite resulting in significant symptomatic discomfort). Residuals from past thermal injury may result in the inability to perform functions as a member due to limitations of strength, endurance, or flexibility.

(c) Documented evidence of a predisposition to heat stress with recurrent episodes or resulting residual injury. A predisposition to heat stress can result in the potential for sudden incapacitation and the inability to perform functions as a member due to limitations of endurance.

(d) Any other systemic condition that results in a person not being able to perform as a member.

A-3-18.2 Category B medical conditions of tumors and malignant diseases can include the following:

(a) The medical evaluation of any person with malignant disease that is newly diagnosed, untreated, or currently being treated will be deferred.

Any person with treated malignant disease should be evaluated based on that person's current physical condition and on the likelihood of that person's disease to recur or progress.

(b) Any other tumor or similar condition that results in a person not being able to perform as a member.

A-3-19.2 Category B medical conditions of a psychiatric nature include the following:

(a) Any person with a history of a psychiatric condition or substance abuse problem should be evaluated based on that person's current condition. Psychiatric conditions and substance abuse problems can result in frequent episodes of pain or the inability to perform work and the potential for sudden incapacitation. These conditions are progressive illnesses leading to functional impairment.

(b) Any other psychiatric condition that results in a person not being able to perform as a member.

A-3-20.2 Category B medical conditions concerning chemicals, drugs, and medications include the following:

(a) Anticoagulant agents such as coumadin can be permitted if the anticoagulated state is controlled such that the prothrombin time or INR has been in the therapeutic range on a stable medical regimen for at least one month and that no other coexisting conditions would either contribute to a bleeding diathesis or by themselves preclude certification for full duty. Anticoagulant agents can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(b) Cardiovascular agents (for example, antihypertensives) can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(c) The use of narcotics can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(d) The use of sedative-hypnotics can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(e) The use of stimulants can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(f) The use of psychoactive agents can result in frequent episodes of pain or the inability to perform work, as well as the potential for sudden incapacitation.

(g) The use of steroids can result in frequent episodes of pain or the inability to perform work.

(h) Any other chemical, drug, or medication that results in a person not being able to perform as a member is included in this group.

A-4-2.1 Physicians who care for members need to be familiar and keep up-to-date with the most current recommendations for post-exposure prophylaxis (PEP) for bloodborne pathogen (BBP) exposures. Also there should be a written protocol for dealing with members who present with BBP exposures. This should be based on the following elements:

(1) Fact sheet that explains in lay language the risks of infection, the various prophylactic and therapeutic options, the testing and follow-up that will be needed and recommendations for personal behavior (i.e., safe sex, blood donation, and so forth) following an exposure.

(2) Classification table to determine the exposure type and recommendation for prophylaxis. Current recommendations of U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, and Public Health Services.

(3) Listing of testing to be done on exposed member, including the following:

a. HIV
b. Hepatitis B surface Antibody (HBsAb), if not previously known to be positive
c. Hepatitis B surface Antigen (HBsAg), if not previously known to be positive HBsAb
d. Hepatitis C Antibody (HCAb)
e. If HIV prophylaxis is to be given, the following tests should be done:
   1. CBC
   2. Glucose, renal and hepatic chemical function
   3. Pregnancy test for females

(4) Listing of testing to be done on source patient, including the following:

a. HIV
b. HBsAg
c. HCAb

(5) If source is available, interview for HIV, HepB, and HepC risk/status.

(6) Determination of risk and need for PEP

(7) Member counseling regarding PEP medication(s) and side effects of treatment. A printed fact sheet should be available for the member to review.

(8) If PEP prophylaxis is to be given, it should be done as soon as possible after the incident, preferably within 2 hours.

(9) Members on prophylaxis need to be followed (preferably by an ID specialist) for the duration of their treatment.

(10) Assessment of tetanus status and administration of dT booster, if appropriate

(11) Assess HepB status

a. If previously immunized with a positive post-immunization titer, no further treatment is needed.
b. If previously immunized, titer was negative, and source is HBsAg positive or high risk, give Hepatitis B Immune Globulin (HBIG) as soon as possible — preferably within 24 hours — and a dose of Hepatitis B vaccine.
c. If previously immunized and titer is unknown, draw titer.
   1. If titer is positive, no further treatment is needed.
   2. If titer is negative and source is HBsAg positive or high risk, then give Hepatitis B Immune Globulin (HBIG) as soon as possible — preferably within 24 hours — and a dose of Hepatitis B vaccine.
d. If previously immunized with negative titer and revaccinated with a negative titer, give HBIG immediately and a second dose 1 month later.
e. If never immunized, give HBIG and begin Hepatitis B vaccine series.

(12) Follow-up instructions should include the following:

a. Adverse events and side effects of PEP
b. Signs and symptoms of retroviral illness (fever, adenopathy, rash)
c. Appointments for follow-up blood work, including the following:
   1. HIV at 6 weeks, 3 months, and 6 months
   2. HBsAb and/or HCAb at 6 weeks, 3 months, and 6 months, if source is HepB and/or HepC positive
   3. Every other week CBC, renal and liver function, if receiving PEP

A-4-2.2 Post-exposure prophylaxis may also be indicated for the following diseases:

(1) Diphtheria
(2) Hepatitis A
(3) Meningitis
(4) Pertussis
(5) Rabies
(6) Varicella Zoster

A-4-3.1 An annual TB program should include the following:

(1) Documentation of a two-step purified protein derivative (PPD) prior to this PPD or a 0-mm PPD within the past 1 year.
(2) Placement of PPD and reading by a trained, designated reader within 48 hours to 72 hours of placement. Members with a history of positive PPD should fill out a questionnaire.
(3) PPD results should be documented in millimeters (mm). A test with no skin reaction should be recorded as 0 mm.
(4) A PPD skin test will be considered positive if the following conditions are present:
    a. Greater than 5 mm in someone who is immunosuppressed
    b. Greater than 10 mm in someone with a normal immune system who is at risk for conversion due to an exposure
    c. Greater than 10 mm increase from previous reading
(5) If PPD is positive (conversion), the following steps should be taken:
    a. Fill out questionnaire
    b. Obtain chest x-ray
    c. Evaluate for active disease
    d. Evaluate for preventative therapy
(6) If active disease is diagnosed, the member has to be removed from any duty until she/he has been determined to be noninfectious. This will occur when adequate therapy has been instituted, the cough has resolved, and 3 consecutive sputum smears for acid-fast bacillus (AFB) on different days are negative.

A-4-3.2 In the event of an exposure to TB, the following steps should be taken:

(1) Member should receive a PPD within 14 days of exposure. Members with a history of positive PPD should fill out a TB questionnaire.
(2) Repeat PPD or questionnaire should be done 6 weeks to 12 weeks after the first.
(3) If PPD is positive (conversion) or questionnaire is positive, proceed as per (5) and (6) of A-4-3.1.

A-4-4 29 *CFR* 1910.1030 requires that members be offered Hepatitis B immunization at no cost to the member. Members who choose to decline the offer of this immunization are required to sign a written declination. The declination becomes part of a member's confidential health data base as specified in Section 8-4 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. Members are allowed to recant at any time and receive offered immunizations.

A-5-1.1 Having a preplanned rehabilitation program that is applicable to most incident types is essential for the health and safety of members. This program should outline an ongoing rehabilitation for simple or short-duration incidents as well as a process to transition into the rehabilitation needs of a large or long-duration incident. Medical evaluation and treatment in the on-scene rehabilitation area should be conducted according to emergency medical service (EMS) protocols developed by the fire department in consultation with the fire department physician and the EMS medical director. If advanced life support (ALS) personnel are available, this level of EMS care is preferred.

A-5-1.2 Weather factors during emergency incidents can impact severely on the safety and health of members, who are operating during extremes of heat or cold. Where these factors combine with long-duration incidents or situations that require heavy exertion, the risks to members increase rapidly. The fire department should develop procedures, in consultation with the fire department physician, to provide relief from adverse climatic conditions.

The following are typical rehabilitation considerations for operations during hot weather extremes:

(1) Moving fatigued or unassigned members away from the hazardous area of the incident
(2) Removing personal protective equipment
(3) Ensuring that personnel are out of direct sunlight
(4) Ensuring that there is adequate air movement over personnel, either naturally or mechanically
(5) Providing members with fluid replenishment, especially water
(6) Providing medical evaluation for personnel showing signs or symptoms of heat exhaustion or heat stroke

The following are typical rehabilitation considerations for operations during cold weather extremes:

(1) Moving fatigued or unassigned members away from the hazardous area of the incident
(2) Providing shelter from wind and temperature extremes
(3) Providing members with fluid replenishment, especially water
(4) Providing medical evaluation for members showing signs or symptoms of frostbite, hypothermia, or other cold-related injury

A-5-2.2 The assignment of an ambulance or other support crew to the rehabilitation function is essential during long-duration or heavy-exertion incident operations. This crew can assist with rehabilitation functions as well as be available to provide immediate basic life support needs for members. Advanced life support (paramedic) level of evaluation and treatment has to be available quickly, however, to ensure the proper level of care.

The medical staff has to have an assigned medical director. This can be an on-scene physician such as a fire department physician, a remote physician at a base hospital, or a central medical direction facility.

A-5-3.2 For major incidents or escalating incidents, medical control can be established by the fire department physician or medical director at the incident scene.

Burn Injury. When a member suffers a burn injury, he or she should be evaluated as to the extent of injury. First-degree burns can be treated on scene, and the member may continue duty. Second-degree burns should be evaluated by a physician familiar with burns, such as an emergency department physician, a member of a burn unit, or a fire department physician. Second-degree burns and higher are conditions that demand that the member be removed from emergency response duty. After the burns have healed to the extent that there is minimal risk for entry into the member's body of body fluids and chem-

icals encountered during regular duties, he or she can return to full duty.

The American Burn Association has criteria for referral to a burn center. They are second- and third-degree burns with characteristics as follows:

(1) Exceeding 20 percent body surface area (BSA)
(2) Exceeding 10 percent BSA for age under 10 or over 50
(3) Any third-degree burn over 5 percent BSA
(4) Involving hands, feet, face, perineum, genitalia, or major joints
(5) Circumferential involving extremities or chest
(6) Caused by contact with chemicals, electricity, or lightning
(7) Coupled with smoke inhalation injury
(8) Associated with multiple trauma
(9) Involving patients with pre-existing significant medical illness

Musculoskeletal Sprains. Strains and sprains are among the most common member injuries. When they occur during periods when circulating catecholamines are high, such as on the fireground, the injured member might underestimate the severity of the injury. Under such conditions, he or she might continue working and worsen the injury.

Evaluation of these type of injuries on the fireground can be difficult. The injury might worsen with time due to swelling, muscle spasm, and increased pain perception after the emergency call is over. Any acute injury that leads to swelling or results in more than a trivial limitation of motion should probably be evaluated by a physician.

Smoke Inhalation. Smoke inhalation is fortunately becoming less common, due to the use of self-contained breathing apparatus. A member with smoke inhalation should be treated with 100 percent oxygen and transported to an emergency department. Burns involving greater than 15 percent of body surface area, facial burns, singed hair, and airway soot are associated with more severe airway burns. Lower airway injury can be associated with carbonaceous sputum, wheezing, rales, rhonchi, and chest pain. Pulmonary function tests can reveal a decrease in forced expiratory volume in one second (FEV1). A chest radiograph may disclose infiltrates or atelectasis. Hypoxemia may be seen on arterial blood gas analysis. A normal chest radiograph and normal arterial blood gas results do not, however, rule out significant smoke inhalation injury.

Endotracheal intubation should be performed if there is central nervous system, stridor, hypoxemia (PO_2 less than 60), hypercarbia (PCO_2 greater than 50), full-thickness burns of the face or neck, airway or pulmonary edema, or inability to handle secretions. Positive end–expiratory pressure (PEEP) should be used if hypoxemia persists despite intubation and administration of 100 percent oxygen. Inhaled beta-agonists and anticholinergics can be used for bronchospasm. Systemic corticosteroids are not recommended for pneumonitis or pulmonary edema. Antibiotics may be needed if sputum gram stain and culture with fever and leukocytosis suggest the presence of a bacterial pneumonia.

Down Member. Certainly the scenario involving the discovery of an unconscious member is one that is difficult to manage given the psychological responses of all involved. Of course, the first priority is the safe removal of the victim from the hazardous area. Then the Airway, Bleeding, Cardiac (ABCs) are carried out and a secondary survey performed. Transport to a hospital should be expedited.

Any unconscious member should be treated with 100 percent oxygen, since carbon monoxide poisoning is common and cyanide poisoning possible as secondary effects of smoke inhalation. At the emergency department, the victim should have an arterial carboxyhemoglobin determined and should be evaluated for possible cyanide toxicity. If cyanide poisoning is suspected, treatment with a cyanide antidote kit should be initiated. Since inducing methemoglobinemia in a patient with an elevated carboxyhemoglobin level may further impair oxygen delivery, only sodium thiosulfate should be given initially. If treatment with hyperbaric oxygen is started, nitrites may be used.

A-5-4.3 Items that can assist in limiting temperature stress in cold environments include heat, blankets, and protection from the wind. For hot weather, items should include adequate shade, fans, air-conditioning, and misting systems. Food and hydration needs include water and oral fluids, food, broth, and fruit. Also, for hydration, a 50/50 mixture of water and an electrolyte replacement drink can be provided. Medical equipment should include blood pressure cuffs, stethoscopes, oxygen, cardiac monitors, thermometers, and intravenous fluid and supplies.

A-5-4.4 The incident commander should consider the circumstances of each incident and make suitable provisions for rest and rehabilitation of members operating at the incident scene. For example, when members consume air from two SCBA air cylinders (two-cylinder rule), they should be assigned to rehab.

A-5-4.5 The measurement of the pulse rate has been used by some fire departments in assessing members during rehabilitation. A persistently elevated pulse could be a sign of excessive stress on the body due to dehydration, heat stress, exhaustion, or cardiopulmonary disease. The use of a pulse rate has not been studied in a manner that allows strict medical protocol to be recommended. The pulse rate combined with the remainder of the clinical evaluation of the member may be used to determine if the member can return to operations.

Appendix B Information for Fire Department Physicians

This appendix is not a part of the requirements of this NFPA document but is included for informational purposes only.

B-1 Occupational Safety and Health Problems for Members.

B-1.1 General. Fire fighting and emergency response are very difficult jobs. People in these jobs perform functions that are physically and psychologically very demanding. These functions are often performed under very difficult conditions. *(See Appendix C.)*

B-1.2 Physical Load. Studies have shown that fire-fighting functions require working at near maximal heart rates for prolonged periods of time. Heavy protective equipment (including respirators) and the heat from the fire contribute to this physical load.

B-1.3 Toxic Substances. Members and emergency response personnel also are exposed to many toxic substances during their work. Carbon monoxide is the most common contaminant; studies have shown individual exposures that are as high as 5000 ppm during actual fires. Other significant exposures common during fires include cyanide, acrolein, hydrogen chloride, nitrogen dioxide, and benzene. The burning of plastics and other synthetic materials can expose members to other toxic materials, such as isocyanates and nitrosamines. Hazardous materials incidents can involve exposures to many

other toxic materials. Although the use of respirators helps to reduce exposures, mechanical, environmental, and behavioral factors can limit their use during all phases of a fire.

The available health data on members are limited. While the protection for members has improved over the last several years, exposures might be changing due to the introduction of more synthetic materials. Given the delay between exposure and onset, (that is, latency) of many occupational illnesses, current or past health studies of members might not reflect future health risks. These limitations should be recognized when reviewing the available studies.

B-1.4 Increased Risk of Injury and Disease. Available data indicate that members have increased risk for injuries, pulmonary disease, cardiovascular disease, cancer, and noise-induced hearing loss. The increased risk for injuries is expected, given the demands and circumstances of this work. Fatalities and serious injuries from burns or other fire-scene hazards can occur.

The risk for respiratory disease occurs due to the respiratory damage caused by many of the components of fire smoke (for example, particulate, acrolein, nitrogen oxides, and so on.) Acute reductions in pulmonary function and even hypoxemia are not uncommon after fires, even in asymptomatic members. Permanent damage from smoke inhalation has also been reported. Studies of chronic pulmonary changes from fire fighting have not had consistent results. Some follow-up studies have shown a greater rate of decline in pulmonary function among members over time, while others have not been able to detect this change. Increased use of protective equipment and job selection factors (ill members transferring to other duties) could account for these inconsistent findings.

The strenuous work demands of fire fighting combined with exposures to carbon monoxide and other toxic substances can increase the risk for cardiovascular disease among members. Acute respiratory changes also can stress the cardiovascular system. This increased cardiovascular disease risk has been documented even in some mortality studies, despite the job selection factors that tend to mask any increase when compared to the general population. Other studies have not detected this risk. Certainly, the combination of the physical stress of fire fighting and exposures for a person with preexisting coronary heart disease would be expected to increase the risk of a myocardial infarction or other acute event. However, the degree of this acute risk and whether fire fighting also contributes to the development of coronary heart disease is uncertain.

Increased cancer risk for members has been found in several recent studies. While not totally consistent, these studies generally show an increased risk of brain cancer, (gastrointestinal cancers) colon cancer, prostate cancer, lymphoma, and leukemia among members in many different parts of the world. Increased incidence of other cancer sites has also been shown in some studies. Several studies are currently under way to further evaluate this risk.

Noise-induced hearing loss has now been documented in several studies of members. Members might also be at risk from other specific exposures including infectious diseases and liver, kidney, or neurological damage from exposure to specific chemicals.

B-2 Guidance for Medical Evaluations.

B-2.1 Preplacement and Baseline Medical Evaluations.

Preplacement medical evaluations assess an individual's health status before assignment to a position. The purpose of the evaluation is to ascertain whether the individual has any health condition that prevents him or her from performing the job, including the ability to wear protective equipment required for the job. The evaluation should also identify any health problems that could be substantially aggravated by the physical demands and working conditions. Baseline medical information concerning the applicant's health status can then be compared to subsequent evaluation results for the purpose of determining whether the individual has any significant health trends that can be occupationally related.

Two types of information are essential for a medical preplacement evaluation of those performing member duties. First, the physician must understand the working conditions and physical demands of this occupation. Appendix C provides a list of the environmental factors encountered in fire fighting and emergency response. The physician also should obtain additional information from the fire department regarding specific job duties and task lists (if the fire department has conducted a validation study or job analysis) and should be familiar with the organization of the fire department. For the evaluation of some medical conditions, the physician will need to obtain further information about specific job duties in order to make a determination. This might require on-site inspections and consultation with fire department personnel.

Second, the physician needs to have accurate information about the person's disease or medical condition, the functional limitations associated with that condition, and an understanding of how physical demands and working conditions would impact on that condition. An accurate diagnosis is often the key factor in determining the person's capability. For example, different skin diseases can have similar clinical appearances but can markedly differ in their response to environmental exposures. The physician should also recognize that individual variability can exist between persons with the same clinical condition.

Upon completion of the examination, the physician should inform the authority having jurisdiction whether the applicant is medically qualified to perform as a member.

B-2.2 Periodic Medical Evaluations. The periodic medical evaluation is designed to evaluate the person's continued ability to perform his or her duties and to detect any other significant changes in the condition of his or her health. The latter includes possible job-related changes or abnormalities.

Every year, each member will be medically evaluated by the fire department physician. This medical evaluation includes an update on the member's medical history, including any significant changes, a brief review of symptoms, and a report on any significant job-related exposures experienced during the past year. Height, weight, visual acuity, and blood pressure are measured and recorded. The extent of the medical evaluation and additional testing will depend on the member's medical condition.

A more thorough evaluation, including a medical examination, is conducted on a periodic basis. For individuals less than 30 years of age, the medical evaluation and examination is conducted at least every three years; for those 30 to 39 years of age, at least every two years; and for those 40 years of age or over, every year. This evaluation should include an updated

medical and interval history, complete physical examination, vision testing, audiometry, pulmonary function testing, and a CBC, urinalysis, glucose, BUN, creatinine, liver function tests, and lipid profile.

The use of chest x-rays in surveillance activities in the absence of significant exposures, symptoms, or medical findings has not been shown to reduce respiratory or other health impairment. Therefore, only preplacement chest x-rays are recommended.

No firm guidelines for stress electrocardiography in asymptomatic individuals have been developed. There have been problems with false-positive results from this testing, especially in younger age groups and in women. In those with one or more risk factors for coronary artery disease, there is probably justification for performing the testing. As well, stress tests are more important in those whose work deals with public safety.

Stress tests can be performed using a treadmill, bicycle, or stair climber, as long as the protocol being used gradually increases in workload metabolic equivalent of resting energy expenditure (METS). A submaximal test, with the endpoint being the attainment of 85 percent of predicted maximal heart rate (PMHR), may be performed. Additional information gained by performing a maximal symptom-limited test might not be worth the additional time, effort, cost, and risk.

A reasonable approach is to start periodic treadmill testing on members at age 40. In those with one or more coronary artery disease risk factors [premature family history (less than age 55), hypertension, diabetes mellitus, cigarette smoking, and hypercholesterolemia (total cholesterol greater than 240 or HDL cholesterol less than 35)], testing should be started by age 35. The frequency of testing should increase with age, but at the minimum the test should be done at least every two years. Testing can also be done as indicated for those with symptoms suggestive of coronary artery disease, as reported in their yearly medical histories or interim reports.

Conversely, it is known that even maximal stress testing frequently misses cardiac abnormalities seen during actual firefighting duties.

B-2.3 Content of the Medical Evaluation.

B-2.3.1 Medical and Occupational History. The medical history should cover the person's known health problems, such as major illnesses, surgeries, medication use, allergies, and so forth. Symptom review is also important for detecting early signs of illness. In addition, a comprehensive medical history should include a personal health history, a family health history, a health habit history, an immunization history, and a reproductive history. An occupational history should also be obtained to collect information about the person's past occupational and environmental exposures.

B-2.3.2 Medical Examination. The medical examination includes the following organ systems and tests:

(1) Vital signs, such as pulse, respiration, blood pressure, and, if indicated, temperature
(2) Dermatological
(3) Ears, eyes, nose, mouth, throat
(4) Cardiovascular
(5) Respiratory
(6) Gastrointestinal
(7) Genitourinary
(8) Endocrine and metabolic
(9) Musculoskeletal
(10) Neurological
(11) Audiometry
(12) Visual acuity and peripheral vision testing
(13) Pulmonary function testing
(14) Laboratory testing, if indicated
(15) Diagnostic imaging, if indicated
(16) Electrocardiography, if indicated

B-2.3.2.1 Laboratory Tests. CBC, biochemical test battery, urinalysis, glucose, BUN, creatinine, liver function tests, and lipid profile, should be conducted for detecting specific illnesses as well as developing a baseline for later comparison.

B-2.3.2.2 X-rays. A baseline chest x-ray can be helpful for individuals with a history of respiratory health problems or symptoms. For others, it can be useful for later comparison.

B-2.3.2.3 Pulmonary Function Testing. Pulmonary function testing can be helpful for individuals with a history of respiratory health problems and as a baseline for later comparison. A baseline test should be administered by an experienced person. Only a spirogram that is technically acceptable and demonstrates the best efforts by an individual should be used to calculate the forced vital capacity (FVC) and forced expiratory volume in one second (FEV1).

B-2.3.2.4 Audiometry. Audiograms should be performed in an ANSI-approved soundproof booth (ANSI S3.1, *Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms*) with equipment calibrated to ANSI standards (ANSI S3.6, *Specification for Audiometers*). If a booth is unavailable, the test room sound pressure levels should not exceed those specified in the federal OSHA noise regulations (29 *CFR* 1910.95).

B-2.3.2.5 Electrocardiography. Baseline electrocardiography should be conducted. (Periodic resting electrocardiograms have not been shown to be useful, but may be reasonable as a member's age increases.)

B-2.4 Reporting the Results of the Medical Evaluation. All individuals participating in a medical evaluation should be informed ahead of time about the purpose of the medical evaluation and the content of the exam. The results of any medical evaluation are considered to be confidential medical information, subject to customary patient-physician confidentiality restrictions. Under most circumstances, results and recommendations arising from the evaluation should be expressed in general terms without specific diagnostic information. In cases where more specific information is needed in order to make a decision on the status of a candidate or member, a specific consent form releasing that information should be obtained from the candidate or member. Blanket or general "release of medical information" forms should not be used.

In most cases, a simple statement like one of the following will suffice:

(a) Based on the results of the preplacement medical evaluation of December 10, 1996, Jane Doe is (or is NOT) medically certified to engage in training and emergency operations for Anytown Fire Department.

(b) Based on the results of the preplacement medical evaluation of December 10, 1996, John Doe is NOT medically certified to engage in training and emergency operations for Anytown Fire Department. He has been advised of the medical reasons for this recommendation and of the policies and procedures available to him if he disagrees with the results of the medical evaluation.

B-2.5 Second Opinions. Fire department policies and procedures should allow for a medical second opinion when a candidate or member disagrees with the results or recommendations of a medical examination conducted by the fire department physician or when the fire department physician is uncertain about the limitations or prognosis of the individual's condition. Often other physicians will not be familiar with the duties and demands of fire fighting and emergency response. When possible, the fire department physician should help educate the other physician about how the individual's condition could affect or be affected by fire fighting. If there is still disagreement about the condition or placement recommendation, a third physician (acceptable to both the fire department and the candidate) can be consulted.

B-2.6 Musculoskeletal System. Some of the injuries or problems encountered in this system will need functional capacity evaluation to determine fitness for duty. Physical therapy providers often design tests for employers to determine ability to perform tasks similar to those required as part of their essential job functions. These tests should be based on direct measurements of the actual job functions. These functional capacity evaluations can be especially useful when a member has been cleared for full duty by a physician who is not familiar with the essential job functions of a member.

B-3 Specific Medical Conditions.

B-3.1 Diabetes Mellitus. The major concern for diabetic members is the risk of becoming hypoglycemic during fireground operations or other emergency responses. Both exogenous insulin and oral hypoglycemic agents can be associated with episodes of hypoglycemia that can rapidly progress from impaired judgment to unconsciousness. The most reliable predictor of hypoglycemia is a history of it. In one study of insulin-dependent adolescents conducted at the Joslin Clinic (Bhatia and Wolfsdorf 1991), all 196 patients experienced hypoglycemia at least once during the two-year observation period. Of these, 15 percent were classified as severe, based on loss of consciousness, seizure, or the clinical need for therapeutic glucagon or intravenous glucose. It was particularly concerning that 24 percent of hypoglycemic episodes detected by blood glucose monitoring were inapparent to the patients. The probable causes of hypoglycemia were identified in 71 percent of cases, and the most common were strenuous exercise and skipped meals or snacks. Both of these precipitants are likely to occur in emergency responders, especially fire service personnel. In addition to accelerating glucose utilization, strenuous exercise increases insulin sensitivity (Wasserman and Sinman 1994). With the tighter glycemic control that is now known to decrease and delay onset of diabetic complications, there is a concomitantly increased likelihood of exercise-induced hypoglycemia (Wasserman and Sinman 1994).

Insulin is clearly associated with a much higher risk of symptomatic hypoglycemia than are oral agents. In the absence of a history of incapacitating hypoglycemic episodes, and with close medical monitoring, there is probably no reason to exclude members who are taking oral hypoglycemic agents, as long as they have stable weights, diets, and renal function. Although the Americans with Disabilities Act (Public Law 101-336 1990) does not appear to require each diabetic patient to be evaluated for fitness for duty individually, there is some case law that disallowed blanket exclusion of insulin-dependent diabetics from public safety positions (Fire & Police Personnel Reporter 1994). The Federal Aviation Administration (14 *CFR* 67.1316 1995) does not grant medical certificates to diabetics treated with insulin and severely limits those on oral hypoglycemic agents.

B-3.2 Asthma and Reactive Airways Disease. The diagnosis of asthma and related airway hyperactivity disorders is often confounded by definitional issues. For the purposes of member certification, a variety of airway disorders that meet the following criteria can be included. Asthma is a chronic inflammatory disorder of the airways. In susceptible individuals, this inflammation causes symptoms that are usually associated with widespread but variable airflow obstruction that is often reversible, either spontaneously or with treatment, and causes an associated increase in airway responsiveness to a variety of stimuli.

Since asthma is a highly prevalent disease, a number of member applicants will require special evaluation. Combustion products, exercise, and cold air are all potent provokers of an asthma attack. Some of these exposures are unavoidable, even with SCBA use. If a candidate has a diagnosis or symptoms consistent with an asthma-like disease, many factors will need to be considered. An asthma attack during a suppression activity could harm the member, his fellow members, or a member of the public.

The following factors can be used to help in certification:

(1) Persistence of airway obstruction between attacks (as measured by spirometry)
(2) Need and frequency of steroid and bronchodilator use (frequent bronchodilator use suggests persistent airway hyperactivity)
(3) Usual type of triggers in the applicant (allergic, infectious, exercise-induced, etc.)
(4) History of hospitalization, emergency room, or urgent treatment
(5) Length of time between attacks
(6) Nocturnal symptoms and other estimates of airway instability

Moderate asthma or worse could disqualify an individual for member duties. Unknown factors such as the suppression of airway hyperactivity with anti-inflammatory medications to reduce the possibility of a sudden or severe attack are under investigation and could modify current suggestions.

B-3.3 Heart Disease. The medical conditions relating to the cardiovascular system have been reviewed since the previous edition (1997) of this document. The task forces at the Bethesda Conference published recommendations for athletes competing with cardiovascular disease in the *Journal of the American College of Cardiology*, in October 1994. The analysis used by the task force has relevance to the evaluation of members with cardiovascular disease. Fire-fighting activities have a high static component (i.e., inducing predominantly an increase in blood pressure) and a moderate to high dynamic component (i.e., inducing predominantly an increase in heart rate). Sports with a similar set of demands include wrestling, body building, and boxing. Recommendations made by the task force with respect to athletic activities that have these physical demands (high static, moderate dynamic) have been followed in this document.

B-3.4 Reproductive. Exposures in the fire-fighting environment can cause adverse reproductive effects for both males and females. Medical evidence exists to indicate that chemical exposure, heat, noise, and physical exertion can affect various endpoints of reproductive health including fertility, fetal loss,

and growth parameters of the offspring. All candidates and members should be educated about these risks and about the need to take appropriate steps to limit their exposures.

Also, there could be some situations where a male or female member is attempting to conceive a child and is having difficulty. In these situations, where a complete medical evaluation has not identified another cause for this infertility, temporary assignment on a voluntary basis to alternative duty or a leave of absence should be considered.

Medical evidence exists that certain toxic substances or conditions that are present in the fire-fighting environment are dangerous to the safety and well-being of the fetus. Therefore, it is important to educate all members about these risks and the reasons for recommending that pregnant members restrict their fire-suppression activities. For example, there is good evidence that the fetus is especially sensitive to carbon monoxide, a known significant component of fire smoke. Although the use of SCBA is assumed to be protective, sometimes such equipment is not used throughout a fire suppression or hazardous materials incident. The use of such equipment also increases other fetal stressors, such as exertion and heat. Other concerns are those involving physical work. Prolonged standing, heavy lifting, and exposures to temperature extremes and humidity have been related to an increase of preterm and low birth weight infants. Because the fetus should be protected from these exposures at the earliest possible time, the member who might be pregnant should obtain early pregnancy testing. Recognizing potential risks to the fetus from the fire-fighting environment is a relatively recent event, and many members might not be aware of these risks.

Based on a recent U.S. Supreme Court decision (International Union et al. v. Johnson Controls, Inc., 59 U.S.L.W. 4209, March 20, 1991), the ability to perform as a member is to be the basis for the medical certification without consideration of health risks to the fetus. However, the pregnant member should be counseled on the potential risks to her fetus due to her exposures during fire-fighting duties.

Any member who becomes pregnant should be offered the opportunity at any time during the pregnancy to be voluntarily removed from fire-fighting duties and from other duties involving the hazards or physical stress that might endanger the fetus. If practical, the member should be offered voluntary reassignment to an alternative position. At such time as the pregnant member can no longer be medically certified as being capable of performing fire-fighting duties, the member should be reassigned to other duties. At such time as the member is no longer pregnant, the member should be reinstated to the position held prior to being pregnant. Nursing members should also be advised about the potential exposures to their infants.

B-3.5 Noise-Induced Hearing Loss. This category can pose difficulties because a high percentage of current members have noise-induced hearing loss due to their exposures as members. Implementation of hearing conservation programs and programs to reduce noise exposures should lead to a decrease in the prevalence of this condition in the future.

B-3.6 Seizures and Epilepsy. It is important to distinguish between a history of seizures and epilepsy. As much as 10 percent of the population will experience at least one seizure in a lifetime, whereas less than 1 percent of the population qualifies for a diagnosis of epilepsy (Hauser and Hesdorffer 1990). Many conditions producing seizures in the pediatric age group are known to remit prior to adulthood, and many adults sustain a reactive seizure that can be attributed to a reversible, underlying precipitant. These circumstances do not necessarily represent an ongoing risk of sudden, unpredictable incapacitation of a member. If a member has a single seizure, a clear precipitant not associated with central nervous system damage is identified and eliminated, and the individual has no recurrence over the ensuing year, then he or she is probably not more likely to have another seizure than the rest of the general population (Spencer 1995). Most fire department physicians will want a qualified neurologist to verify that an individual with a history of seizures does not, in fact, have epilepsy.

Epilepsy is diagnosed by the presence of "unprovoked, recurrent seizures — paroxysmal disorders of the central nervous system characterized by an abnormal cerebral neuronal discharge with or without loss of consciousness" (Cascino 1994). Treatment of patients with epilepsy is only variably successful, with roughly 40 percent of patients attaining remission on anti-convulsant therapy (Hauser and Hesdorffer 1990; Spencer 1995). Remission is defined as five years without recurrence of seizure activity (Annegers, Hauser, and Elveback 1979). Further complicating the fitness-for-duty issue is the fact that only 50 percent of patients who achieve remission do so without toxic side effects of the anti-convulsant drug (Cascino 1994).

Partial, simple epilepsy, or recurrent seizures that do not impair consciousness, are felt to be a disqualifying condition because of the uncertainty regarding how much of the brain might be involved, and the risk of propagation to other regions of the brain, particularly in the highly epileptogenic environment of the fireground (Spencer 1995).

This standard is somewhat more liberal than that promulgated by the Federal Aviation Administration of the U.S. Department of Transportation for aircraft pilots (14 *CFR* 67.1316 1995). All epileptics, regardless of therapeutic success are denied first-, second-, or third-class medical certificates, except under the provisions of 14 *CFR* 67.19, "Special Issue of Medical Certificates."

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Appendix C Essential Structural Fire-Fighting Functions

This appendix is not a part of the requirements of this NFPA document but is included for informational purposes only.

C-1 The medical requirements in this standard were based on in-depth consideration of essential structural fire-fighting functions. These essential functions are what members are expected to perform at emergency incidents and are derived from the performance objectives stated in NFPA 1001, *Standard for Fire Fighter Professional Qualifications.*

Essential functions are performed in and affected by the following environmental factors:

(1) Operating both as a member of a team and independently at incidents of uncertain duration
(2) Spending extensive time outside exposed to the elements
(3) Tolerating extreme fluctuations in temperature while performing duties; fire fighters are required to perform physically demanding work in hot (up to 400°F), humid (up to 100 percent) atmospheres while wearing equipment that significantly impairs body-cooling mechanisms.
(4) Experiencing frequent transition from hot to cold and from humid to dry atmospheres
(5) Working in wet, icy, or muddy areas
(6) Performing a variety of tasks on slippery, hazardous surfaces such as on rooftops or from ladders
(7) Working in areas where sustaining traumatic or thermal injuries is possible
(8) Facing exposure to carcinogenic dusts such as asbestos, toxic substances such as hydrogen cyanide, acids, carbon monoxide, or organic solvents, either through inhalation or skin contact
(9) Facing exposure to infectious agents such as Hepatitis B or HIV
(10) Wearing personal protective equipment that weighs approximately 50 lb while performing fire-fighting tasks
(11) Performing physically demanding work while wearing positive-pressure breathing equipment with 1.5 in. of water column resistance to exhalation at a flow of 40 L/min
(12) Performing complex tasks during life-threatening emergencies
(13) Working for long periods of time, requiring sustained physical activity and intense concentration
(14) Facing life-or-death decisions during emergency conditions
(15) Being exposed to grotesque sights and smells associated with major trauma and burn victims
(16) Making rapid transitions from rest to near-maximal exertion without warm-up periods
(17) Operating in environments of high noise, poor visibility, limited mobility; at heights; and in enclosed or confined spaces
(18) Using manual and power tools in the performance of duties
(19) Relying on senses of sight, hearing, smell, and touch to help determine the nature of the emergency, to maintain personal safety, and to make critical decisions in a confused, chaotic, and potentially life-threatening environment throughout the duration of the operation

Appendix D Guide for Fire Department Administrators

This appendix is not a part of the requirements of this NFPA document but is included for informational purposes only.

D-1 Legal Considerations in Applying the Standard. The consideration of an application or continued employment of a member based on medical or physical performance evaluations involves a determination that is not without legal implications. To this end, prior to making an adverse employment decision based on the foregoing standard, the authority with jurisdiction might wish to consult with counsel.

D-1.1 Individuals with Handicaps or Disabilities. The Rehabilitation Act of 1973, as amended, 29 U.S.C. 791 et seq., and implementing regulations, prohibit discrimination against those with handicaps or disabilities under any program receiving financial assistance from the federal government. The Americans with Disabilities Act of 1990, 42 U.S.C. § 12101, et seq., also prohibits employment discrimination by certain private employers against individuals with disabilities. In addition, many states have enacted legislation prohibiting discrimination against those with handicaps or disabilities. These laws prevent the exclusion, denial of benefits, refusal to hire or promote, or other discriminatory conduct against an individual based on a handicap or disability, where the individual involved can, with or without reasonable accommodation, perform the essential functions of the job without creating undue hardship on the employer or program involved. Application of this standard should be undertaken with these issues in mind.

The medical requirements of the 1997 edition of this standard were initially developed and found to be job-related by a subcommittee comprised of medical doctors, physiological specialists, and fire service professionals, as processed through the NFPA consensus standards-making system. Changes for the current edition have been proposed by a task group comprised of similar expertise. The standard provides, to the extent feasible, that decisions concerning candidates and current members with medical ailments, handicaps, or disabilities be made after case-by-case medical evaluations. Thus, most medical conditions have been assigned to Category B.

The medical requirements in this edition of the standard were revised based on the essential functions contained in Appendix C. It is recognized that some fire-fighting functions and tasks can vary from location to location due to differences in department size, functional and organizational differences, geography, level of urbanization, equipment utilized, and other factors. Therefore, it is the responsibility of each individual fire department to document, through job analysis, that the essential functions performed in the local jurisdiction are substantially similar to those contained in Appendix C.

There are a wide variety of job analytic techniques available to document the essential functions of the job of a member. However, at a minimum, any method utilized should be current, in writing, and meet the provisions of the Americans with Disabilities Act [29 *CFR* 1630.2(n)(3)]. Job descriptions should focus on critical and important work behaviors and specific tasks and functions. The frequency and/or duration of task performance, and the consequences of failure to perform the task should be specified. The working conditions and environmental hazards in which the work is performed should be described.

The job description should be made available to the fire service physician for use during the preplacement medical examination for the individual determination of the medical suitability of applicants for member.

D-1.2 Anti-Discrimination Laws. Finally, users of this standard should be aware that, while courts are likely to give considerable weight to the existence of a nationally recognized standard such as NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians* [e.g., *Miller v. Sioux Gateway Fire Department*, 497 N.W.2d 838 (1993)], reliance on the standard alone could be insufficient to withstand a challenge under the anti-discrimination laws. Even in the case of Category A medical conditions, courts can still require additional expert evidence concerning an individual candidate's or member's inability to perform the essential functions of the job. Until the courts provide further guidance in this developing area of law, some uncertainty as to the degree and nature of the evidence required to establish compliance with the anti-discrimination laws will remain.

D-1.3 Individuals Who Are Members of Protected Classes (Race, Sex, Color, Religion, or National Origin). Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. 2000e, and implementing regulations by the Equal Employment Opportunity Commission (EEOC) prohibit discrimination in employment on the basis of race, sex, color, religion, or national origin (i.e., protected classes). Under Title VII, an "employer" is defined, generally, to mean a person with "15 or more employees for each working day in each of 20 or more calendar weeks in the current or preceding calendar year." (42 U.S.C. 2000e) Several federal jurisdictions have held that unpaid volunteers are not considered to be "employees" under Title VII.

Additionally, many states, cities, and localities have adopted similar legislation. Generally, physical performance or other requirements that result in "adverse impact" on members of a protected class (e.g., on the basis of gender) are required to be validated through a study in accordance with EEOC guidelines, if such requirements are to be relied on in making employment decisions. Under EEOC guidelines, a study validating employment standards in one jurisdiction can be transportable to another jurisdiction (and therefore used in lieu of conducting a separate study). However, specific preconditions must be met in this regard, and the authority having jurisdiction should seek the advice of counsel before relying on a transported validation study.

D-1.4 Pregnancy and Reproductive. Federal regulations, as well as many court decisions, including the U.S. Supreme Court's decision in *International Union, et al. v. Johnson Controls, Inc.* [499 U.S. 187, 111 S.Ct. 1196 (1991)], have interpreted the requirements of Title VII with respect to pregnancy and reproduction. The authority having jurisdiction should seek the advice of counsel in resolving specific questions concerning these requirements as well as other requirements that can be imposed by state or local laws.

D-2 Choosing a Fire Department Physician. Several factors should be considered in choosing a fire department physician. There are relatively few physicians with formal residency training and certification in occupational medicine. The fire department physician needs to be qualified to provide professional expertise in the areas of occupational safety and health as these areas relate to emergency services. For the purpose of conducting medical evaluations, the fire department physician needs to understand the physiological and psychological demands placed on members and needs to understand the environmental conditions under which members have to perform.

Therefore, physicians with specialties other than occupational need to be considered, as well as the physician's background and experience. Knowledge of occupational medicine and experience with occupational health programs, obviously, would be helpful.

The physician has to be committed to meeting the requirements of the program, including appropriate record keeping. His or her willingness to work with the department to continually improve the program is also important. Finally, his or her concern and interest in the program and in the individuals in the department is vital.

There are many options for obtaining physician services.

(a) Physicians could be paid on a service basis or through a contractual arrangement.

(b) For volunteer departments, local physicians could be willing to volunteer their services for the program, with additional member arrangements for payment of laboratory testing, x-rays, and so forth.

(c) Some departments could utilize a local health care facility for medical care. However, in that case, the department should be sure to have one individual physician responsible for the program, record keeping, and so forth.

(d) In some cases, it could be possible to have the medical examination by the fire department physician, while some of the associated costs could be defrayed by the member's own health insurance. For example, the health insurance provider could allow the member to have a yearly physical, normally performed by the member's personal physician. The health care insurance provider could allow that physical to be performed by the fire department physician with some degree of reimbursement.

D-3 Coordinating the Medical Evaluation Program. An individual from within the department should be assigned the responsibility for managing the health and fitness program, including the coordination and scheduling of evaluations and examinations. This person should also act as liaison between the department and the physician to make sure that each has the information necessary for decisions about placement, scheduling appointments, and so forth.

Confidentiality of all medical data is critical to the success of the program. Members need to feel assured that the information provided to the physician will not be inappropriately shared. No fire department supervisor or manager should have access to medical records without the express written consent of the member. There are occasions, however, when specific medical information is needed to make a decision about placement, return to work, and so forth, and a fire department manager must have more medical information for decision making. In that situation, written medical consent should be obtained from the individual to release the specific information necessary for that decision.

Budgetary constraints can affect the medical program. Therefore, it is important that components of the program be prioritized such that essential elements are not lost. With additional funding, other programs or testing can be added to enhance the program.

D-4 Table D-4 represents a comparison between NFPA 1582 and OSHA 29 *CFR* 1910.134.

Table D-4 Comparison of OSHA 29 *CFR*, Parts 1910.134, "Medical Requirements" and NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, 2000 Edition

NFPA 1582	OSHA 1910.134
2-1 Medical Evaluation Process. **2-1.1*** The fire department shall establish and implement a medical evaluation process for candidates and current members.	The employer must establish and implement those elements of the written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering face pieces (dust masks).
Appendix D-3 Coordinating the Medical Evaluation Program. An individual from within the department should be assigned the responsibility for managing the health and fitness program, including the coordination and scheduling of evaluations and examinations. This person should also act as liaison between the department and the physician to make sure that each has the information necessary for decisions about placement, scheduling appointments, and so forth. Confidentiality of all medical data is critical to the success of the program. Members must feel assured that the information provided to the physician will not be inappropriately shared. No fire department supervisor or manager should have access to medical records without the express written consent of the member. There are occasions when specific medical information is needed to make a decision about placement, return to work, and so forth, and a fire department manager must have more medical information. In that situation, written medical consent should be obtained from the individual to release the specific information necessary for that decision. Budgetary constraints can affect the medical program. Therefore, it is important that components of the program be prioritized such that essential elements are not lost. With additional funding, other programs or testing can be added to enhance the program.	(3) The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of the program effectiveness.
2-1.2 The medical evaluation process shall include preplacement medical evaluations, periodic medical evaluations, and return-to-duty medical evaluations.	(1) General. The employer shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. The employer may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

(Sheet 1 of 5)

Table D-4 Comparison of OSHA 29 *CFR*, Parts 1910.134, "Medical Requirements" and NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, 2000 Edition *(Continued)*

NFPA 1582	OSHA 1910.134
2-1.3 The fire department shall ensure that the medical evaluation process and all medical evaluations meet all of the requirements of Section 2-1.	(3) Follow-up medical examination. (i) The employer shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for follow-up medical examinations. (ii) The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the physician or licensed health care professional (PLHCP) deems necessary to make a final determination.
2-1.4 Each candidate or current fire fighter shall cooperate, participate, and comply with the medical evaluation process and shall provide complete and accurate information to the fire department physician. **2-1.5*** Each candidate or current fire fighter shall, on a timely basis, report to the fire department physician any exposure or medical condition that could interfere with the ability of the individual to perform as a fire fighter. **2-4.1.1** The components of the annual medical evaluation specified in 2-4.1.2 of this section shall be permitted to be performed by qualified personnel as authorized by the fire department physician. When other qualified personnel are used, the fire department physician shall review the data gathered during the evaluation.	(7) Additional medical evaluations. At a minimum, the employer shall provide additional medical evaluations that comply with the requirements of this section if: (i) An employee reports medical signs or symptoms that are related to ability to use a respirator; (ii) A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be re-evaluated; (iii) Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation; or (iv) A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

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Table D-4 Comparison of OSHA 29 *CFR*, Parts 1910.134, "Medical Requirements" and NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, 2000 Edition *(Continued)*

NFPA 1582	OSHA 1910.134
2-2 Fire Department Roles. **2-2.1** The fire department shall have an officially designated physician who shall be responsible for guiding, directing, and advising the members with regard to their health, fitness, and suitability for duty as required by NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. **2-2.2** The fire department physician shall be a licensed doctor of medicine or osteopathy. **D-2** Choosing a Fire Department Physician. Several factors should be considered in choosing a fire department physician. There are relatively few physicians with formal residency training and certification in occupational medicine. The fire department physician shall be qualified to provide professional expertise in the areas of occupational safety and health as they relate to emergency services. For the purpose of conducting medical evaluations, the fire department physician shall understand the physiological and psychological demands placed on fire fighters and shall understand the environmental conditions under which fire fighters must perform. Therefore, physicians with other specialties need to be considered. The background and experience of the physician should be considered. Knowledge of occupational medicine and experience with occupational health programs obviously would be helpful. The physician must be committed to meeting the requirements of the program including appropriate record keeping. His/her willingness to work with the department to continually improve the program is also important. Finally, his/her concern and interest in the program and in the individuals in the department is vital. There are many options for obtaining physician services. They could be paid on a service basis or through a contractual arrangement. For volunteer departments, local physicians might be willing to volunteer their services for the program with additional arrangements to pay for laboratory testing, x-rays, and so forth. Some departments might want to utilize a local health care facility for their care. However, in that case, the department should be sure to have one individual physician responsible for the program, record keeping, and so forth. In some cases it could be possible to have the medical examination by the fire department physician, while some of the associated costs could be defrayed by the fire fighter's own health insurance. For example, the health insurance provider might allow the fire fighter to have a yearly physical, normally performed by the fire fighter's personal physician. The health care insurance provider can allow that physical to be performed by the fire department physician with some degree of reimbursement.	(2) Medical evaluation procedures. (i) The employer shall identify a physician or other licensed health care professional (PLHCP) to perform medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire. (ii) The medical evaluation shall obtain the information requested by the questionnaire in Sections 1 and 2, Part A of Appendix C of this section.

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Table D-4 Comparison of OSHA 29 *CFR*, Parts 1910.134, "Medical Requirements" and NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, 2000 Edition *(Continued)*

NFPA 1582	OSHA 1910.134
2-2.3* For the purpose of conducting medical evaluations, the fire department physician shall understand the physiological and psychological demands placed on members and shall understand the environmental conditions under which members must perform. The fire department shall provide the fire department physician with a current job description for all fire department positions and ranks. **B-1** Occupational Safety and Health Problems for Fire Fighters. Fire fighting and emergency response are very difficult jobs. People in these jobs perform functions that are physically and psychologically very demanding. These functions are often performed under very difficult conditions. (See Appendix C.) Studies have shown that fire-fighting functions require working at near maximal heart rates for prolonged periods of time. Heavy protective equipment (including respirators) and the heat from the fire contribute to this physical load. Fire fighters and emergency response personnel also are exposed to many toxic substances during their work. Carbon monoxide is the most common contaminant; studies have shown individual exposures as high as 5000 ppm in actual fires. Other significant exposures common in fires include cyanide, acrolein, hydrogen chloride, nitrogen dioxide, and benzene. The burning of plastics and other synthetic materials can expose fire fighters to other toxic materials such as isocyanates and nitrosamines. Hazardous materials incidents can involve exposures to many other toxic materials. While the use of respirators helps to reduce exposures, mechanical, environmental, and behavioral factors can limit their use during all phases of a fire.	(e) Medical evaluation. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and the workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator. (5) Supplemental information for the PLHCP. (i) The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator: (A) The type and weight of the respirator to be used by the employee; (B) The duration and frequency of respirator use (including use for rescue and escape); (C) The expected physical work effort; (D) Additional protective clothing and equipment to be worn; and (E) Temperature and humidity extremes that be encountered. (ii) Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for subsequent medical evaluation if the information and the PLHCP remain the same. (iii) The employer shall provide the PLHCP with a copy of the written respiratory protection program and a copy of this section. Note to paragraph (e)(5)(iii): When the employer replaces a PLHCP, the employer must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. However, OSHA does not expect employers to have employees medically re-evaluated solely because a new PLHCP has been selected.

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Table D-4 Comparison of OSHA 29 *CFR*, Parts 1910.134, "Medical Requirements" and NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, 2000 Edition *(Continued)*

NFPA 1582	OSHA 1910.134
2-4.1 The current member shall be certified annually, or at the request of either the fire department or the member, by the fire department physician as meeting the medical requirements of Chapter 3 of this standard in order to determine that member's medical ability to continue participating in a training or emergency operational environment as a member. Any applicable OSHA standards, such as 29 *CFR* 1910.120, "Hazardous Waste Operations and Emergency Response," 29 *CFR* 1910.134, "Respiratory Protection," 29 *CFR* 1910.95, "Occupational Noise Exposure," and 29 *CFR* 1910.1030, "Bloodborne Pathogens," shall be followed.	(6) Medical determination. In determining the employee's ability to use a respirator, the employer shall: (i) Obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP. The recommendation shall provide only the following information: (A) Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.; (B) The need, if any, for follow-up medical evaluations; and (C) A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation. (ii) If the respirator is negative a pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer shall provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR. (4) Administration of the medical questionnaire and examinations. (i) The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. (ii) The employer shall provide the employee with an opportunity to discuss the questionnaire and the examination results with the PLHCP.

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Appendix E Sample Forms

This appendix is not a part of the requirements of this NFPA document but is included for informational purposes only.

E-1 Physical Exam Summary. The fire department physician can report results of the periodic medical evaluation, which is designed to evaluate a member's continued ability to perform his or her duties and to detect any significant changes in the condition of his or her health, on a form like the Physical Exam Summary. *(See Figure E-1.)*

E-2 Medical Examination Report. The fire department physician can record information from the medical examination on a form like the Medical Examination Report. *(See Figure E-2.)*

Appendix F Referenced Publications

F-1 The following documents or portions thereof are referenced within this standard for informational purposes only and are thus not considered part of the requirements of this standard unless also listed in Chapter 6. The edition indicated here for each reference is the current edition as of the date of the NFPA issuance of this standard.

F-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 1997 edition.

F-1.2 ANSI Publications. American National Standards Institute, Inc., 11 West 42nd Street, 13th floor, New York, NY 10036.

ANSI S3.1, *Maximum Permissible Ambient Noise Levels for Audiometric Test Room*, 1991 edition.

ANSI S3.6, *Specification for Audiometers*, 1996 edition.

FIGURE E-1 Form for fire department physician's report.

Physical Exam Summary

Employer:

Employee's Name:	Position Title:
Date of Exam:	Examining Physician:

Components Performed	Within Normal Limits	Abnormal, Able to Perform Job Tasks	Abnormal, Unable to Perform Job Tasks	Significant Changes Noted from Previous Exam (if applicable)
☐ Physical exam				
☐ Audiogram				
☐ Pulmonary function				
☐ Treadmill stress				
☐ EKG-12 lead				
☐ Chest x-ray				
☐ Mammogram				
☐ Pelvic/Pap				
☐ Laboratory tests				
☐ Other				

Explanation of Abnormal Results/Significant Changes:

☐ Medically cleared to perform job tasks

☐ Denied medical clearance for current job tasks

NFPA Physical Exam Summary (1 of 2)

FIGURE E-1 ***(Continued.)***

H of P.I.: Mr./Ms. _____ is a _____ v.o. Fire Fighter Police Officer with the _____ department. The purpose of this annual physical is to establish fitness for the continuation of those duties. He/she has enjoyed good health. Mr./Mrs. _____ voiced the following questions:

Medical History
___ D.M.
___ HTN
___ CVD
___ Asthma

Surgical History
___ Orthopedic
___ ENT
___ Optho
___ Other

Medications

Allergies

Social History
___ Smoke
___ PPD
___ Quit
___ PkYr

Exercise
___ Alcohol
___ Amount
___ Frequency

ROS
GI
___ Hematochezia
___ Stool caliber
___ Bowel habits

G.U.
___ Stones
___ Hematuria

CV
___ Chest pain
___ SOB

Resp
___ Cough
___ Wheezes
___ SOB

FH
___ DM
___ HTN
___ CVD

Physical
Insert physical here

Audio
___ HFHL
___ Speech range

Vision
___ Near
___ Far
___ Corrected

EKG/TMT
___ HR
___ Target
___ Interp
___ Stage achieved

Blood
H/H _____
WBC _____
Glu _____
Chol _____
HDL _____
Ratio _____
Risk _____

Stool OB
___ Positive
___ Negative

Pulm
FVC _____
% Pred _____
FEVI _____
% Pred _____

UA
___ Blood
___ Protein
___ Glucose

LFTs
SGOT ____
SGPT ____
GGT _____
Other _____

NFPA Physical Exam Summary (2 of 2)

FIGURE E-2 Medical examination report form.

Medical Examination

1. NAME (Last) (First) (Middle)	2. SEX	3. DATE OF EXAMINATION

4. PLANT OR DIVISION	5. SOC. SEC. OR EMPLOYEE NO.	6. OCCUPATION	7. DATE LAST EXAMINATION

8. REASON FOR PRESENT EXAMINATION

☐ PRE-PLACEMENT ☐ D.O.T. ☐ SURVEILLANCE ☐ IMMIGRATION ☐ F.I.T.

9. TEMP.	10. PULSE	11. BLOOD PRESSURE	12. HEIGHT FT IN.	13. WEIGHT	14. TITMUS SNELLING

15. VISION	UNCORRECTED			CORRECTED			16. COLOR VISION (Use Code)*
DISTANT	RE 20/	BOTH	LE 20/	RE 20/	BOTH	LE 20/	
NEAR	RE 20/	BOTH	LE 20/	RE 20/	BOTH	LE 20/	17. PERIPHERAL

Clinical Evaluation

	Area Examined	* Use Code	Remarks (Describe all "Code 1s" in detail)
18.	Head and neck		
19.	Thyroid		
	Lymph nodes		
20.	Eyes		
	Fundi		
21.	Ears		
22.	Nose and sinuses		
23.	Mouth and throat		
24.	Teeth		
25.	Chest and lungs		
	Breast		
26.	Heart		
27.	Abdomen		
28.	Inguinal, e.g., hernia		
29.	Genitalia		

* Code: 0 — Within normal limits 1 — Significantly abnormal X — Not examined

NFPA Medical Examination Form (1 of 12)

FIGURE E-2 ***(Continued.)***

30.	Pelvis		
31.	Anus and rectum		
	Prostate		
	Proctoscopic		
32.	Spine		
33.	Skin		
34.	Arms		
	Hands		
35.	Legs		
	Feet		
36.	Peripheral-Vascular		
37.	Neurologic		
38.	Emotional status		
39.	Other		

40. Urine dip:	Glucose:	Albumin:	S.G.:
	Heme:	Leukocyte-Esterase:	Other:

41. Flex	42. Step test	43. Body fat	44. PFT	45. Audio
46. Chest x-ray (use 0, 1, or X)	47. EKG (use 0, 1, or X) and specify test used			48. Hemocult
49. Back eval.	50. Tetanus	51. PPD	52. Stress test	

* Code: 0 — Within normal limits 1 — Significantly abnormal X — Not examined

NFPA Medical Examination Form (2 of 12)