

**STUDY GUIDE MATERIALS  
EXAMINATION CONTENT OUTLINES**



**2010**

**Examinations:  
Core  
Aerospace Medicine  
Occupational Medicine  
Public Health and  
General Preventive Medicine**

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## Introduction to The Guide

This Guide has been prepared for physicians who seek to develop knowledge and skills in Preventive Medicine through appropriate reading, class work, formal training, and experience. The Guide describes the scope and content of the field, including the specialty areas, so that physicians may know what is expected of them as they engage in comprehensive specialty practice or prepare for examination by the American Board of Preventive Medicine (ABPM). In addition, a list of competencies has been developed for Preventive Medicine practitioners.<sup>1,2</sup> Review of the competencies and the accompanying performance indicators will assist in targeting content areas for study or review.

A companion document prepared by the ABPM, entitled *Answers to Your Most Asked Questions*, provides additional information on the examination.

The Guide includes outlines of core and specialty area content; approximate percentage distributions of test items; lists of books, periodicals, and other materials which have been found to be useful to practitioners and examinees; and general information about Board examinations. The outlines and lists are not claimed to be all-inclusive or definitive. In every specialty, time and circumstances bring changes in what is expected of its practitioners. Books grow out of date and are replaced by later editions or alternative works by different authors. Thus, although the Guide is revised from time to time, the Board makes no claim that cited texts are best or most current and cannot assure that persons who read any or all listed texts will achieve competence or perform at some predictable level on the examination. Further, it is well recognized that personal backgrounds and preferences are important determinants of the suitability of any particular text or educational medium.

Examinations conducted by the ABPM are intended to confirm the determination by the Board that the candidate is qualified by training and experience to claim competence in the respective specialty area. Accordingly, the examinations cover both Preventive Medicine core and the more focused content of specialty practice. The former emphasizes the approach of the physician to the prevention and control of disease in populations and the promotion of health. Fundamental are biostatistical and epidemiologic skills; an understanding of the organizational and administrative factors related to regulations, multi-disciplinary agencies, and the legal system; and basic comprehensive Preventive Medicine knowledge, including basic Aerospace Medicine, Occupational Medicine, and Public Health and General Preventive Medicine.

(1) Lane D.S., Ross V., Parkinson M.D., Chen D.W.: Performance Indicators for Assessing Competencies of Preventive Medicine Residents, *American Journal of Preventive Medicine*, 1995; 11:1-8

(2) Lane D.S., Ross V., Chen D.W., O'Neill, C.: Core Competencies for Preventive Medicine Residents: Version 2.0, *American Journal of Preventive Medicine*, 1999; 16:367-372.

The specialty area examinations are intended to assess whether the candidate claiming to have the knowledge, skills, and experience associated with comprehensive specialty practice is qualified to do so. The Board recognizes that many applicants are engaged in practice or have received training which is not fully congruent with Board expectations. However, the Board cannot adjust its definition of specialty practice to conform to the day-to-day work experience of a varied group of applicants. Applicants who judge their training and experience to lack elements regarded by the Board as important will find it helpful to prepare for comprehensive specialty practice, and examination, by guided study. This Study Guide outlines the scope of practice and provides a list of useful texts and periodicals. There is no certainty that the answer to every examination question will be found in the cited materials, as many questions require an exercise of discernment and judgment rather than a specific textbook answer.

Candidates commonly inquire if review books, courses, or similar exam preparation offerings are of value. Many examinees feel that brief courses enhance recall of previously acquired knowledge and improve one's approach to multiple-choice examinations in general. But it is quite unlikely that anyone will learn, for example, biostatistics or toxicology, in a review course or from a review CD or other media. Board and exam committee members do not participate as faculty in such activities nor are such practice questions abstracted from Board examinations and vice versa. Some review questions may be similar to examination questions; however it is not correct to infer that there is a transfer of content as a small change in a question or in a response may change what is the correct answer.

There are no trick questions, and it would be unusual for a question to reflect very recent events or issues (i.e., new "hot" topics) because of the lead time necessary to develop the full examination. The general purpose is to ascertain whether there is a sound base of specialty-relevant knowledge and skills and the ability to exercise discernment and judgment.

There are 150 questions on the core and 150 questions on the specialty area examinations. All questions are weighted equally. Candidates will find it of advantage to answer all questions, and there is no penalty for an incorrect answer, i.e., wrong answers are not subtracted from right answers and there is no advantage in leaving a question unanswered. Thus, the candidate who has no idea as to the correct answer and responds at random will have a 25% chance of selecting it since there are four choices for each questions. In most cases, even when the correct answer is not known with confidence, the candidate will have sufficient knowledge to exclude 2 or 3 of the choices as improbable. Guessing on the remaining possibilities offers better odds than 25% and reflects the fact that the candidate should earn partial advantage from knowing what is not right.

Board examination questions are all multiple choice, best single answer with four possible responses. The question may contain a clinical vignette, an experimental or epidemiological observation, a definition or classification, an administrative problem, an application of a principle or regulation, or any situation which might be faced by a specialist in practice.

## SAMPLE QUESTIONS

1. The effectiveness of a new blood test for the detection of disease X was studied in a group of 100 patients with disease X and a group of 400 healthy persons. The following data were obtained.

	Disease		Total
	Present	Absent	
Test Positive	99	30	129
Test Negative	1	370	371
Total	100	400	500

The specificity of the test is best expressed as:

- A.  $30/400 \times 100\% = 7.5\%$
  - B.  $99/129 \times 100\% = 76.7\%$
  - C.  $370/400 \times 100\% = 92.5\%$
  - D.  $99/100 \times 100\% = 99.0\%$
2. The increased incidence of lung cancer among uranium miners is best attributed to exposure to:
- A. alpha radiation
  - B. beta radiation
  - C. gamma radiation
  - D. neutron radiation
3. Which of the following disorders is responsible for the greatest loss of disability-adjusted life-years (DALYs)?
- A. Cardiovascular disease
  - B. Depressive disorders
  - C. Diabetes mellitus
  - D. Schizophrenia
4. An underserved rural area has a relatively high number of HIV infection / AIDS patients who are uninsured. What federal agency may be a potential source of funding to provide care for them?
- A. Health Resources and Services Administration (HRSA)
  - B. Agency for Healthcare Research and Quality (AHRQ)
  - C. National Institutes of Health (NIH)
  - D. Centers for Disease Control and Prevention (CDC)

## STUDY OUTLINES

Four outlines follow: 1) the overall specialty of Preventive Medicine (referred to in examinations as Core); 2) Aerospace Medicine; 3) Occupational Medicine; and 4) Public Health and General Preventive Medicine. Each outline is intended to describe the scope of the field; the scope of the respective examination is essentially congruent. However the statement of scope does not reflect the appropriate weighting of any given item as determined by importance or frequency in practice. Thus, items of fundamental importance and those with less frequent application or more peripheral concern appear in outline to be equivalent.

The distribution of examination questions is weighted in favor of relevance to actual practice; however candidates who are preparing to represent themselves as medical specialists must recognize that they are responsible for knowledge and skills across the breadth of their chosen specialty field, not only in the preponderant content of their day-to-day practice. Examinations do not stress esoterica, and they do require that examinees demonstrate sound understanding of the entire specialty. A primary purpose of these outlines is to describe the extent of the specialty fields.

An additional statement about the Core is appropriate. The Core examination is intended to cover material which is expected to be understood by all specialists in Preventive Medicine. All diplomates of the Board are expected to share a common or core competence in biostatistics, epidemiology, occupational and environmental health, clinical preventive medicine, and administration. The Core questions assess the candidate's grasp of fundamentals required of all physicians in Preventive Medicine.

## PREVENTIVE MEDICINE CORE

### BOOKS

- 2009 Report of the Committee on Infectious Diseases ("Redbook"), 28th Ed., American Academy of Pediatrics, 2009.
- Fletcher R.H., Fletcher S.W., Wagner E.H.: Clinical Epidemiology: The Essentials, 4<sup>th</sup> Ed, Williams & Wilkins, New York, 2005.
- Heymann, D.L. (Ed.): Control of Communicable Diseases Manual, 19th Ed., American Public Health Assn, 2008.
- Jekel, James F., et al: Epidemiology, Biostatistics and Preventive Medicine, 3rd Ed., W.B. Saunders Company, Philadelphia, 2007.
- Last, J.M., Wallace, R.: Maxcy-Rosenau-Last, Public Health and Preventive Medicine, 15th Ed., McGraw Hill, 2007.

### WEBSITES

- U.S. Preventive Services Task Force: Guide to Clinical Preventive Services.  
<http://www.ahrq.gov>

### PERIODICALS (PREVIOUS FIVE YEARS) INCLUDING:

- American Journal of Preventive Medicine.  
Journal of the American Medical Association.  
Journal of the American Public Health Association.  
Morbidity and Mortality Weekly Report.  
New England Journal of Medicine.

### STUDY QUESTIONS

- Hebel JR and McCarter RJ: A Study Guide to Epidemiology and Biostatistics, 6th Ed., Jones and Bartlett, Sudbury, MA, 2006.
- Katz, David L.: Epidemiology Biostatistics and Preventive Medicine Review, 3<sup>rd</sup> Ed., W.B. Saunders Company, Philadelphia, 2007.
- Ratelle, S.: Preventive Medicine and Public Health, Pre-Test Self-Assessment and Review, 9th Ed., McGraw-Hill, New York, 2000.

## PERCENTAGE DISTRIBUTION OF TEST ITEMS

- I. Health Services Management (Systems-Based Practice) 15%
- II. Epidemiology and Biostatistics 35%
- III. Clinical Preventive Medicine 20%
- IV. Behavior and Mental Health 12%
- V. Environmental 18%

## CORE OUTLINE

- I. HEALTH SERVICES MANAGEMENT (SYSTEMS-BASED PRACTICE)
  - A. Organization
    - 1. Government
    - 2. Service Delivery
  - B. Health Care Delivery
    - 1. Models
    - 2. Medical Management
    - 3. Business Management
    - 4. Utilization Management
  - C. Finance and Economics
    - 1. Health Care Economics
    - 2. Services Payment and Financing
    - 3. Financial Management
  - D. Organizational Structure and Development
    - 1. Bureaucracy Characteristics
    - 2. Strategic Planning and Policy Development
    - 3. Program Assessment and Evaluation
    - 4. Quality and Patient Safety
    - 5. Organizational Development/Effectiveness
  - E. Legal and Ethical Issues
    - 1. Ethics
    - 2. Legislation and Regulatory Compliance
- II. EPIDEMIOLOGY AND BIostatISTICS
  - A. Design and Methods
    - 1. Data Sources and Coding
    - 2. Study Design
    - 3. Biases and Control Measures
    - 4. Confounding
    - 5. Decision Analysis
  - B. Interpretation
    - 1. Measures of Central Tendency
    - 2. Tests of Significance
    - 3. Probability
    - 4. Hypothesis Testing
    - 5. Type I error
    - 6. Type II error
    - 7. Confidence intervals
    - 8. Power
    - 9. Sample Size
    - 10. Multivariate analysis
    - 11. Correlation
    - 12. Multiple regression
    - 13. Survival Analysis
    - 14. Meta-Analysis
    - 15. Number Needed to Treat
    - 16. Causation and Association
    - 17. Measurement of Effect
  - C. Vital Statistics and Demography
    - 1. Rates and Measures
    - 2. Trends
  - D. Prevention and Control
    - 1. Disease Surveillance-Active and Passive
    - 2. Screening Tests
    - 3. Outbreak Investigation and Intervention

### III. CLINICAL PREVENTIVE MEDICINE

- A. Cardiovascular Diseases
  - 1. Coronary Artery Disease
  - 2. Cerebrovascular Disease
  - 3. Hypertension
  - 4. Hyperlipidemia
- B. Respiratory Diseases
  - 1. Asthma
  - 2. COPD
  - 3. Other
- C. Neoplastic Diseases
  - 1. Bladder Cancer
  - 2. Breast Cancer
  - 3. Cervical Cancer
  - 4. Gastrointestinal Cancers
  - 5. Hematological Malignancies
  - 6. Lung Cancer
  - 7. Oral Cancer
  - 8. Ovarian Cancer
  - 9. Prostate Cancer
  - 10. Skin Cancer
  - 11. Testicular Cancer
  - 12. Thyroid Cancer
- D. Infectious Diseases
  - 1. Bacterial
  - 2. Viral
  - 3. Parasitic
  - 4. Fungal
  - 5. Spirochete
  - 6. Atypical
  - 7. Food-borne Illnesses
  - 8. Sexually Transmitted
  - 9. Immunizations
  - 10. Emerging Infections
- E. Metabolic Disorders and Nutrition
  - 1. Diabetes Mellitus
  - 2. Thyroid Diseases
  - 3. Obesity
  - 4. Clinical Nutrition
- F. Musculoskeletal Disorders
  - 1. Osteoporosis
  - 2. Back Pain & Sciatica
  - 3. Arthritis
- G. Neurological Disorders
- H. Oral Health, Vision and Hearing Disorders
  - 1. Oral Health
  - 2. Visual Disorders
  - 3. Hearing Impairment
- I. Maternal & Child Health
- J. Genetics
- K. Complementary and Alternative Care

### IV. BEHAVIOR AND MENTAL HEALTH

- A. Mental/Behavioral Disorders
  - 1. Epidemiology
  - 2. Prevention/Intervention
  - 3. Risk Factors
- B. Substance Abuse
  - 1. Epidemiology
  - 2. Risk Factors
  - 3. Screening
  - 4. Prevention/Intervention

- C. Health Promotion and Health Screening
  - 1. Health Education Theories and Models
  - 2. Individual
  - 3. Population

### V. ENVIRONMENTAL

- A. Agents
  - 1. Chemical
  - 2. Physical
  - 3. Biological
- B. Community health
  - 1. Air quality
  - 2. Water quality
  - 3. Climate
  - 4. Food safety
  - 5. Sanitation
  - 6. Hazardous materials management
  - 7. Radiation
  - 8. Heat/cold
  - 9. Noise
  - 10. Injury
- C. Occupational medicine
- D. Aerospace medicine
- E. Travel
- F. Risk Assessment
- G. Risk Management
- H. Risk Communication
- I. Disaster planning and management
  - 1. Natural
  - 2. Manmade/Bioterrorism

## AEROSPACE MEDICINE

### BOOKS

- Davis, J.R., et al.: Fundamentals of Aerospace Medicine, 4th Ed., Lippincott Williams & Wilkins, 2008.
- Rainford, D.J., Gradwell, D.P.: Ernsting's Aviation Medicine, 4th Ed., Oxford University Press, New York, 2006.
- Barratt, M.R., et al.: Principles of Clinical Medicine for Space Flight, 1<sup>st</sup> ed, Springer, 2008.
- Rayman, R., et al: Clinical Aviation Medicine, 4th Ed., Professional Publishing Group, New York, 2006.

### WEBSITES

- Aerospace Medical Association Medical Guidelines for Airline Travel  
<http://www.asma.org/publications/medicalguideline.php>
- Aerospace Medicine Practice Guidelines (completed guidelines only)  
<http://www.asams.org/guidelines.htm>
- Guide for Aviation Medical Examiners  
[http://www.faa.gov/about/office\\_org/headquarters\\_offices/avs/offices/aam/ame/guide/](http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/)

PERIODICALS (PREVIOUS FIVE YEARS) INCLUDING:  
Aviation, Space and Environmental Medicine.

## PERCENTAGE DISTRIBUTION OF TEST ITEMS

- I. The Flight Environment (40%)
- II. Clinical Aerospace Medicine (30%)
- III. Operational Aerospace Medicine (20%)
- IV. Management and Administration (10%)

## SPECIALTY OUTLINE

### I. THE FLIGHT ENVIRONMENT

- A. The Biosphere
- B. Theory of flight
  - 1. Aviation - fixed and rotary wing
  - 2. Spaceflight
- C. Physiology
  - 1. Respiratory
  - 2. Cardiovascular
  - 3. Spatial orientation
  - 4. Bioacoustics
  - 5. Visual
- D. Gravitational effects
  - 1. High performance
  - 2. Microgravity
- E. Pressure effects
  - 1. Hypobaric
  - 2. Hyperbaric
- F. Other physical effects
  - 1. Shock and vibration
  - 2. Thermal
  - 3. Radiation
  - 4. Toxicology

- G. Human factors
  - 1. Human-machine interface
  - 2. Human performance
- H. Aerospace systems
  - 1. Vehicles
  - 2. Ground support
  - 3. Simulators
  - 4. Remotely Piloted Vehicles
  - 5. Escape mechanisms
  - 6. Medical systems

### II. CLINICAL AEROSPACE MEDICINE

- A. Fitness for duty and return to work
  - 1. Cardiology
  - 2. Pulmonary
  - 3. Ophthalmology
  - 4. Otolaryngology
  - 5. Psychology and psychiatry
  - 6. Neurology
  - 7. Other medical and surgical conditions
- B. Health maintenance
  - 1. Wellness
  - 2. Self-imposed stress

### III. OPERATIONAL AEROSPACE MEDICINE

- A. Air and space operations
  - 1. Military
  - 2. Civil aviation
  - 3. Space
- B. Selection and retention
  - 1. Medical standards
  - 2. Aeromedical evaluations
  - 3. Longitudinal surveillance
- C. Aeromedical transportation
- D. Survival, search and rescue
  - 1. Crash worthiness
  - 2. Search and rescue systems
  - 3. Airport disaster management
- E. Mishap investigation
  - 1. Site activities
  - 2. Forensic considerations
  - 3. Accident rate and data
- F. Travel medicine

### IV. MANAGEMENT AND ADMINISTRATION

- A. Regulations
  - 1. Military
  - 2. Civil
  - 3. International
- B. Organizations
  - 1. ICAO
  - 2. WHO
  - 3. DOT/FAA
  - 4. NASA
  - 5. NTSB

## OCCUPATIONAL MEDICINE

### BOOKS

- Occupational Medicine Practice Guidelines: Evaluation and Management of Common Health Problems and Functional Recovery in Workers, ACOEM, 2nd Ed, 2008.
- Hathaway, G.J., Proctor, N.H.: Proctor and Hughes' Chemical Hazards of the Workplace, 5th Ed., Wiley-Interscience, 2004.
- LaDou, J.: Current Occupational & Environmental Medicine, 4th Ed., McGraw Hill Companies, New York, 2007.
- McCunney, R.J.: A Practical Approach to Occupational and Environmental Medicine, 3rd Ed., Lippincott Williams & Wilkins, 2003.
- Moser, Jr., R.: Effective Management of Health and Safety Programs, 3rd Ed., OEM Press, Beverly, MA, 2008.
- Rom, W.N.: Environmental and Occupational Medicine, 4th Ed., Lippincott Williams & Wilkins, 2006.
- Sullivan, J.B., Krieger, G.R.: Clinical Environmental Health and Toxic Exposures, 2nd Ed, Lippincott Williams & Wilkins, 2001.
- Wald, P.H., Stave, G.M.: Physical and Biologic Hazards of the Workplace, 2nd Ed., Wiley, 2002.

### WEBSITES

- American College of Occupational and Environmental Medicine Position Statements  
<http://www.acoem.org/guidelines.aspx>
- Federal Motor Carrier Safety Administration  
<http://www.fmcsa.dot.gov>
- Office of Drug and Alcohol Policy and Compliance  
<http://www.dot.gov/ost/dapc/>
- Occupational Safety and Health Administration  
<http://www.osha.gov>
- National Institute of Occupational Safety and Health  
<http://www.cdc.gov/niosh>

### PERIODICALS (PREVIOUS FIVE YEARS) INCLUDING:

- American Journal of Industrial Medicine  
American Journal of Health Promotion  
Journal of Occupational and Environmental Medicine  
Occupational and Environmental Medicine  
Occupational Medicine

## PERCENTAGE DISTRIBUTION OF TEST ITEMS

- I. Prevention, Exposure Assessment, Hazard Recognition and Control (20%)
- II. Clinical Patient Care (60%)
- III. OEHS Administration and Systems-based Practice (20%)

## SPECIALTY OUTLINE

- I. PREVENTION, EXPOSURE ASSESSMENT, HAZARD RECOGNITION AND CONTROL
  - A. Hazard Characterization
  - B. Toxicological Principles
  - C. Ergonomics
  - D. Ionizing radiation
  - E. Non-ionizing radiation
  - F. Noise
  - G. Dysbarism
  - H. Temperature

- I. Chronobiology
- J. Occupational safety and controls
- K. Industrial hygiene
- L. Personal protective equipment
- M. Environmental Health
- N. Risk Assessment

### II. CLINICAL PATIENT CARE

- A. General Patient Evaluation and Testing
- B. Ophthalmology
- C. Ear, Nose and Throat
- D. Pulmonary
- E. Cardiology
- F. Hepatic and gastrointestinal
- G. Genitourinary
- H. Hematology/Oncology
- I. Infectious Diseases and Biohazards
- J. Musculoskeletal
- K. Neurology
- L. Psychiatry
- M. Reproductive medicine
- N. Dermatology
- O. Clinical Toxicology

### III. OEHS ADMINISTRATION AND SYSTEMS-BASED PRACTICE

- A. Medical surveillance programs
- B. Medical ethics and confidentiality
- C. Regulations
  1. OSHA
  2. EPA
  3. FMLA
- D. Workers' compensation
- E. Health care delivery systems
- F. OEHS program management
- G. Health and productivity
- H. Emergency and disaster management
  1. Programmatic planning
  2. Chemical
  3. Biological
  4. Nuclear
- I. Transportation medicine, including Commercial Driver Medical Examinations
- J. Disability administration
  1. Disability prevention and management
  2. Americans with Disabilities Act
  3. Fitness for Duty and Return to Work
  4. Violence
- K. Substance use and abuse
- L. Workplace violence

## PUBLIC HEALTH AND GENERAL PREVENTIVE MEDICINE

### BOOKS

- Friis, R.H.: Essentials of Environmental Health, Jones and Bartlett, 2007.
- Haynes, R.B., et al: Clinical Epidemiology: A Basic Science for Clinical Medicine, 3rd Ed., Lippincott Williams & Wilkins, 2005.
- Novick L.F., et al: Public Health Administration: Principles for Population-Based Management, 2<sup>nd</sup> Ed, Jones and Jones & Bartlett, 2007.
- Rothman, K.J., et al: Modern Epidemiology, 3<sup>rd</sup> ed, Lippincott Williams & Wilkins, 2008.
- Scutchfield F.D., Keck C.W.: Principles of Public Health Practice, 3<sup>rd</sup> ed, Delmar, 2009.

### WEBSITES

- Guide to Community Preventive Services  
<http://thecommunityguide.org>
- Healthy People 2010  
<http://www.healthypeople.gov>

*\*In addition to the reference material listed above, all reference materials (books, periodicals, and study questions) listed for the Core on page 4 are applicable.*

## PERCENTAGE DISTRIBUTION OF TEST ITEMS

- I. HEALTH SERVICES ADMINISTRATION (30%)
- II. ENVIRONMENTAL HEALTH (15%)
- III. BIostatISTICS (10%)
- IV. EPIDEMIOLOGY (15%)
- V. CLINICAL PREVENTIVE MEDICINE (30%)

## SPECIALTY OUTLINE

### I. HEALTH SERVICES ADMINISTRATION AND SYSTEMS-BASED PRACTICE

- A. Organization
  - 1. Public sector
  - 2. Private sector
- B. Financing and delivery
  - 1. Public sector
  - 2. Private sector
  - 3. Financing mechanisms
- C. Public health practice
  - 1. Concepts, definitions and practice areas
  - 2. Legal and ethical issues
  - 3. Public health practice tools
- D. Systems-based practice
  - 1. Medical errors and patient safety
  - 2. Quality measurement, assurance and improvement
  - 3. Patient satisfaction and functional status
  - 4. Demand and disease management strategies and programs

### II. ENVIRONMENTAL HEALTH

- A. Global issues
  - 1. Climate change
  - 2. Threat of nuclear warfare
  - 3. Biological warfare and bioterrorism
  - 4. Chemical warfare and terrorism
- B. Public health protection
  - 1. Air quality
  - 2. Water quality
  - 3. Food quality
  - 4. Physical stressors
  - 5. Solid waste management
  - 6. Hazardous materials management
  - 7. Land use and planning
  - 8. Environmental site assessment
- C. Risk assessment
  - 1. Hazard identification
  - 2. Exposure assessment
  - 3. Dose response assessment
  - 4. Risk characterization

### III. BIostatISTICS

- A. Describing data
  - 1. Frequencies and distributions
  - 2. Measures of central tendency
  - 3. Measures of variation
  - 4. Probability
  - 5. Standard scores
  - 6. P-values
- B. Statistics
  - 1. Statistical inference
  - 2. t test
  - 3. Analysis of variance (ANOVA)
  - 4. Simple linear regression
  - 5. Multiple regression
  - 6. Analysis of covariance
  - 7. Time series analysis
  - 8. Chi-square
  - 9. Measurement scales
  - 10. Binomial test
  - 11. Fisher exact test
  - 12. McNemar test
  - 13. Mann-Whitney test
  - 14. Median test
  - 15. Sign test
  - 16. Wilcoxon test
  - 17. Spearman Rank Correlation Coefficient
  - 18. Life table (or survival) analysis
  - 19. Logistic regression
  - 20. Multivariable analysis of variance
  - 21. Multiple correlation coefficient
  - 22. Partial correlation
- C. Hypothesis testing
- D. Meta-analysis

#### IV. EPIDEMIOLOGY

- A. Data sources
  - 1. Vital records
  - 2. Reportable diseases
  - 3. Surveys
  - 4. Registries
  - 5. Morbidity
  - 6. Census
  - 7. National health surveys
- B. Study design
  - 1. Experimental studies
  - 2. Quasi-experimental studies
  - 3. Observational studies
- C. Measurements of morbidity and mortality
  - 1. Rates, ratios and proportions
  - 2. Life expectancy
  - 3. Population pyramids
  - 4. Measures of disability
- D. Measures of effect
  - 1. Attributable risk (risk difference)
  - 2. Relative risk
  - 3. Odds ratio
- E. Epidemiologic associations and data interpretation
  - 1. Causality
  - 2. Bias (systematic error)
  - 3. Generalizability
- F. Epidemiology of infectious diseases
  - 1. Agents
  - 2. Characteristics of infectious agents
  - 3. Host characteristics
  - 4. Environment characteristics
  - 5. Modes of transmission
  - 6. Measures of disease outbreaks
  - 7. Outbreak investigation and intervention
  - 8. Evaluation of intervention
- G. Legal and ethical aspects of epidemiologic studies
  - 1. Human subjects review
  - 2. Screening
  - 3. Conflicts of interest
  - 4. Community involvement
  - 5. Archived samples

- 11. Prenatal screening
- 12. Pediatric health supervision/anticipatory guidance
- 13. Genetic screening
- C. Tertiary prevention and disease management
  - 1. Antibiotic resistant organisms
  - 2. Organ transplantation

#### V. CLINICAL PREVENTIVE MEDICINE

- A. Primary prevention
  - 1. Personal health behaviors
  - 2. Infectious diseases
  - 3. Chemoprophylaxis
- B. Secondary prevention
  - 1. Principles of screening
  - 2. Cardiovascular disease
  - 3. Cancer
  - 4. Infectious diseases
  - 5. Metabolic disorders
  - 6. Hematologic disorders
  - 7. Respiratory disorders
  - 8. Ophthalmologic and otologic disorders
  - 9. Mental disorders
  - 10. Musculoskeletal disorders