

**STUDY GUIDE MATERIALS
EXAMINATION CONTENT OUTLINES**



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.^{1,2} 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 Books grow out of date and are replaced by later editions or alternative works by different authors.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.

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.

(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.

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

- 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>
- Medical Guidelines for Airline Travel, 2nd Ed. <http://www.asma.org/pdf/publications/medguid.pdf>
- Morbidity Mortality Weekly Reports; <http://www.cdc.gov/mmwr/>

PERIODICALS (PREVIOUS FIVE YEARS) INCLUDING:

American Journal of Preventive Medicine.

STUDY QUESTIONS

- Hebel JR and McCarter RJ: A Study Guide to Epidemiology and Biostatistics, 7th Ed., Jones and Bartlett, Sudbury, MA, 2012.
- Katz, David L.: Epidemiology Biostatistics and Preventive Medicine Review, 3rd 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

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

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

AEROSPACE MEDICINE

BOOKS

- Davis, J.R., et al.: Fundamentals of Aerospace Medicine, 4th Ed., Lippincott Williams & Wilkins, 2008.
- Gradwell, D.P, Rainford, D.J.: Ernsting's Aviation and Space Medicine, 5th Ed., CRC Press, Boca Raton, FL, 2016.
- Barratt, M.R., et al.: Principles of Clinical Medicine for Space Flight, 1st ed, Springer, 2008.
- Rayman, R.B., et al.: Rayman's Clinical Aviation Medicine, 5th Ed., Castle Connolly Graduate Medical Publishing, New York, 2013.

WEBSITES

- Aerospace Medical Association Medical Guidelines for Airline Travel
<https://www.asma.org/publications/medical-publications-for-airline-travel/medical-considerations-for-airline-travel>
- ASAMS Aerospace Medicine Practice Guidelines
<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/media/guide.pdf

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

- LaDou, J.: Current Occupational & Environmental Medicine, 4th Ed., McGraw Hill Companies, New York, 2007.
- Rom, W.N. & Markowitz S: Environmental and Occupational Medicine, 4th Ed., Lippincott Williams & Wilkins, 2006.
- Guidotti, T.L.: Occupational Health Services: A Practical Approach, 2nd Ed., Routledge, 2012.
- ACOEM Occupational Medicine Practice Guidelines, 3rd Ed., 2011.Re: ACOEM Guidelines, focus on: Foundations of Occupational Medicine, core concepts of diagnosis, management and treatment of conditions, summary tables and recommendations for each disorder.

WEBSITES

- Agency for Toxic Substances and Disease Registry
<http://www.atsdr.cdc.gov>
- American College of Occupational and Environmental Medicine Competencies
<http://www.ocoem.org/ocem.aspx>
- National Institute of Occupational Safety and Health
<http://www.cdc.gov/niosh>
- Occupational Safety and Health Administration
<http://www.osha.gov>

PERIODICALS INCLUDING:

- Journal of Occupational and Environmental 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
 1. Walk through assessment
 2. Industrial hygiene surveys
- B. Toxicological Principles
 1. Toxicokinetics
 2. Carcinogenesis
 3. Hydrocarbons & solvents
 4. Metals
 5. Gases
 6. Dusts
 7. Pesticides
 8. Nitrogen Compounds
 9. Chemical Warfare agents
- C. Ergonomics
 1. Evaluation
 2. Control
- D. Physical Hazards
 1. Ionizing radiation
 2. Non-ionizing radiation
 3. Noise
 4. Dysbarism

5. Temperature
 6. Mechanical & electromagnetic
 7. Vibration
 8. Lasers
- E. Chronobiology
 1. Fatigue
 2. Shift work
 3. Travel
 - F. Occupational safety and controls
 - G. Industrial hygiene
 1. Engineering Controls
 2. Personal protective equipment
 3. Administrative Controls
 - H. Environmental Health
 - I. Risk Assessment

II. CLINICAL PATIENT CARE

- A. General Patient Evaluation and Testing
 1. Exposure & occupational history
 2. Causation & Work-relatedness
 3. Contributing factors
- B. Eyes
 1. Screening
 2. Injury
- C. Ear, Nose and Throat
 1. Noise & solvent induced Hearing Loss
 2. Acute Acoustic Trauma
 3. Assessment:
 - a. Audiometry
 4. Barotrauma
- D. Pulmonary
 1. Occupational Disease
 - a. Pneumoconiosis
 - b. Asthma
 - c. Allergic and Immunologic Disease
 - d. Inhalation Disorders
 - e. Cancer
 2. Pulmonary Function Testing
 3. Respirator Certification
 4. Prevention
- E. Heart & vascular System
 1. Effects of physical & chemical agents
 2. Physically and psychologically stressful duties
 3. Fitness for duty
- F. Hepatic and gastrointestinal
 1. Liver & biliary tract disorders
 2. Cancer
 3. Liver function testing
- G. Genitourinary
 1. Renal disorders
 2. Renal & Bladder Cancer
- H. Hematology/Oncology
 1. Hematologic Disorders
 2. Hematologic Cancers
 3. Clinical & Laboratory studies
 - a. Medical surveillance
 - b. Post-exposure
- I. Infectious Diseases and Biohazards
 1. Blood borne pathogens
 2. Tuberculosis
 3. Diseases of travelers & workers
 4. Zoonotic disease
 5. Building-related illnesses
 6. Biologic warfare

- J. Musculoskeletal
 - 1. Spine Disorders & Back Pain
 - a. Diagnosis & management
 - b. Treatment & Prevention
 - 2. Upper Extremity Disorders
 - a. Entrapment Neuropathies
 - b. Overuse syndromes
 - 3. Joint and Extremity injuries & disorders
- K. Neurologic disorders
 - 1. Neurological & mental status exams
 - 2. Neurotoxic exposures
 - 3. Central Nervous System Disorders
 - 4. Peripheral Neuropathy
 - 5. Interpretation of neurologic testing
 - 6. Sleep disorders
- L. Mental Disorders
 - 1. Effects on work capacity
 - 2. Identify, manage & refer impaired employee
 - 3. Work place stress
- M. Reproductive Disorders
 - 1. Common reproductive toxins and their effects
 - 2. Risk & Exposure
 - 3. Protection of fertility
- N. Dermatology
 - 1. Allergic & irritant dermatitis
 - 2. Urticaria
 - 3. Infections
 - 4. Neoplasia
 - 5. Pigmentation disorders
 - 6. Work-aggravated dermatoses
- O. Clinical Toxicology
 - 1. Evaluate & treat exposure to toxins
- P. Pain Management
 - 1. Acute & Chronic management

- 1. Disability prevention and management
- 2. Americans with Disabilities Act
- 3. Fitness for Duty and Return to Work
- K. Substance use and abuse
 - 1. Employee Assistance Programs
- L. Workplace violence

III. OEHS ADMINISTRATION AND SYSTEMS-BASED PRACTICE

- A. Surveillance
 - 1. Principles of surveillance
 - 2. Occupational Disease Surveillance
 - 3. Medical surveillance programs in the workplace
- B. Medical ethics and confidentiality
- C. Regulations
 - 1. OSHA
 - 2. EPA
 - 3. ADA and ADAAA
 - 4. GINA
 - 5. FMLA
- D. Workers' compensation
 - 1. Payment principles
 - 2. Disability assessment
- E. Health care delivery systems
- F. OEHS program management
- G. Health and productivity
 - 1. Health Risk assessments
 - 2. Nutrition
 - 3. Physical activity
 - 4. Lifestyle Medicine
- H. Emergency and disaster management
 - 1. Programmatic planning
 - 2. Chemical
 - 3. Biological
 - 4. Nuclear
- I. Transportation medicine
 - 1. Commercial Driver Medical Examinations
- J. Disability administration

PUBLIC HEALTH AND GENERAL PREVENTIVE MEDICINE

BOOKS

- Friis, R.H.: Essentials of Environmental Health, 2nd ed, Jones and Bartlett, 2012.
- Haynes, R.B., et al: Clinical Epidemiology: How to Do Clinical Practice Research, 3rd Ed., Lippincott Williams & Wilkins, 2005.
- Novick L.F., et al: Public Health Administration: Principles for Population-Based Management, 2nd Ed, Jones & Bartlett, 2007.
- Rothman, K.J., et al: Modern Epidemiology, 3rd ed, Lippincott Williams & Wilkins, 2008.
- Scutchfield F.D., Keck C.W.: Principles of Public Health Practice, 3rd ed, Delmar, 2009.

WEBSITES

- Guide to Community Preventive Services
<http://thecommunityguide.org>
- Healthy People 2020
<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

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

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