Current Medical Diagnosis & Treatment 1989

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Notice: Our knowledge in clinical sciences is constantly changing. As new information becomes available, changes in treatment and in the use of drugs become necessary. The author(s) and the publisher of this volume have taken care to make certain that the doses of drugs and schedules of treatment are correct and compatible with the standards generally accepted at the time of publication. The reader is advised to consult carefully the instruction and information material included in the package insert of each drug or therapeutic agent before administration. This advice is especially important when using new or infrequently used drugs.

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Preface

Current Medical Diagnosis & Treatment 1989 is the twenty-eighth annual revision of a general medical text designed as a single-source reference for practitioners who function in both hospital and ambulatory settings. *CMDT* covers all internal medicine fields plus important topics outside internal medicine. The practical features of patient management are emphasized. Appropriate background information is provided as necessary to facilitate understanding of concepts.

OUTSTANDING FEATURES

- Reissued annually in January to incorporate current advances.
- Over 1000 diseases and disorders.
- All aspects of internal medicine *plus* obstetrics/gynecology, dermatology, ophthalmology, neurology, and other topics of concern to the office practitioner.
- Consistent, readable format, permitting efficient use in various practice settings.
- Selected references marked in some cases with asterisks to call attention to articles of particular clinical interest.
- Emphasizes prevention and cost-consciousness, reflecting *actual* practice of medicine.

  Brevity, conciseness, and easy accessibility of key information.

INTENDED AUDIENCE

House officers and students will find the concise and up-to-date descriptions of diagnostic and therapeutic procedures, with citations to the current literature, of daily usefulness in the immediate management of patients.

Internists, family physicians, and other specialists will find *CMDT* useful as a ready reference and refresher text.

Physicians in other specialties, surgeons, and dentists will find the book useful as a basic treatise on internal medicine,

Nurses and other health practitioners will find that the concise format and broad scope of the book facilitate their understanding of diagnostic principles and therapeutic procedures.

ORGANIZATION

CMDT is developed chiefly by organ system. Chapters 1 and 2 present general information on patient care, including disease prevention, pain management, and special problems of the elderly patient. Chapter 3 discusses medical management of cancer. Chapters 4–21 describe diseases and disorders and their treatment. Chapter 22 sets forth the basic concepts of nutrition in modern medical practice. Chapters 23–31 cover infectious diseases and antimicrobial therapy. Chapters 32–34 cover special topics: physical agents, poisoning, and genetics. The Appendix provides data on normal values of daily relevance to medical practice as well as a section on imaging, the emergency treatment of airway obstruction, and a listing of the reasons and diagnoses responsible for ambulatory care visits. An index of common symptoms and complaints has been included on the inside cover of this edition. It is intended as a quick reference guide for the busy primary care practitioner.

NEW TO THIS EDITION

- New index of common symptoms and presenting complaints.
- A new chapter on AIDS.
- Latest information on patients' reasons for ambulatory care visits and the resulting diagnoses.
- Extensive revision of the chapters on otolaryngology, cardiology, and fungal infections.
- Drug information and bibliographies updated through June 1988.
- New section in the Appendix on the indications for and costs of various imaging techniques.
- Complete revision of section on cancer of prostate.

ACKNOWLEDGMENTS

We wish to thank our associate authors for participating once again in the annual effort of updating this important book. Many students and physicians have contributed useful suggestions to this and previous editions, and we are grateful. We continue to solicit comments and recommendations for future editions. Please address correspondence to us at Lange Medical Publications, 2755 Campus Drive, Suite 205, San Mateo, CA 94403.

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January, 1989

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General Care—Disease Prevention & General Symptoms

1

Steven A. Schroeder, MD

DISEASE PREVENTION

Preventing disease is more important than treating it. Preventive medicine is categorized as primary, secondary, or tertiary. Examples in the case of cancer are giving up or not starting smoking, thereby reducing the incidence of lung carcinoma (primary prevention); routine periodic surveillance by cervical Papanicolaou smear (secondary prevention); and mastectomy to remove localized breast cancer (tertiary prevention). Primary prevention is by far the most effective and economical of all methods of disease control.

Table 1–1 lists the 5 leading causes of death in the USA, along with important risk factors linked to these causes. Physicians can have a major role in reducing almost all of these risk factors, thereby improving their patients' health. Cost considerations may limit the application of some of these (eg, mammography), depending on the setting and the circumstances.

Table 1–1. The 5 leading causes of death in the USA and associated risk factors commonly encountered in clinical practice.[1]

Cause of Death	Risk Factors
1. Cardiovascular disease	Tobacco use. Elevated serum cholesterol. High blood pressure. Obesity. Diabetes. Sedentary life-style.
2. Cancer	Tobacco use. Improper diet. Alcohol. Occupational and environmental exposures.
3. Cerebrovascular disease	High blood pressure. Tobacco use. Elevated serum cholesterol.
4. Accidental injuries	Safety belt noncompliance. Alcohol and substance abuse. Reckless driving. Occupational hazards. Stress and fatigue.
5. Chronic lung disease	Tobacco use. Occupational and environmental exposures.

[1] Adapted from National Center for Health Statistics/U.S. Department of Health and Human Services: *Health United States: 1986*. DHHS Pub. No. (PHS) 87–1232, 1987.

INFECTIOUS DISEASES

Immunization remains the best means of preventing many infectious diseases, including tetanus, diphtheria, poliomyelitis, measles, mumps, hepatitis B, yellow fever, influenza, and pneumococcal pneumonia. Recommended immunization schedules for children and adults are set forth in Table 23–3. Persons traveling to countries where infections are endemic should take special precautions, as described in Chapter 23, p 830.

Skin testing for tuberculosis and then treating selected skin-positive patients with prophylactic isoniazid reduces the risk of reactivation tuberculosis. Treatment is recommended for high-risk reactors regardless of age. These patients include recent tuberculin converters, postgastrectomy patients, persons taking immunosuppressive drugs, and patients with silicosis. For tuberculin-positive patients without these risk factors, treatment with isoniazid is recommended only for those under the age of 35 in order to minimize the risk of hepatitis. It now appears that prophylaxis for only 6 months (300 mg daily) is as effective as 12 months. BCG vaccine should be reserved for use in selected cases, such as protection of health workers in areas where tuberculosis is endemic.

The impressive 20th century accomplishments in immunization and antibiotic therapy notwithstanding, much of the decline in the incidence and fatality rates of infectious diseases is attributable to public health measures—especially improved sanitation, better nutrition, and greater prosperity.

AIDS is now the major infectious disease problem in the Western world. Until a vaccine or cure is found, prevention will be the only weapon against this disease. Since sexual contact is the usual mode of transmission, prevention must rely on safe sexual practices. These include abstinence, prudent selection of partners, avoidance of promiscuity, the use of condoms, and the limiting or avoidance of anal and oral sex

except with partners known to be uninfected (see Chapter 24).

CARDIOVASCULAR & CEREBROVASCULAR DISEASES

Impressive declines in age-specific mortality rates from heart disease and stroke have been achieved in all age groups in North America during the past 2 decades. The chief reason for this favorable trend appears to be a modification of risk factors, especially cigarette smoking, hypercholesterolemia, and hypertension.

Cigarette Smoking

Cigarette smoking remains the most important cause of preventable morbidity and early demise in developed countries. Smokers die 5–8 years earlier than nonsmokers; have twice the risk of fatal heart disease; 10 times the risk of lung cancer; several times the risk of cancers of the mouth, throat, esophagus, pancreas, kidney, bladder, and cervix; a 2- to 3-fold greater incidence of peptic ulcers (which heal less well than in nonsmokers); and about a 2- to 4-fold greater risk of fractures of the hip, wrist, and vertebrae.

The children of parents who smoke have lower birth weights, more frequent respiratory infections, less efficient pulmonary function, and a higher incidence of chronic ear infections than the children of nonsmokers and are more likely to become smokers themselves.

Table 1–2. Some immediate consequences of smoking cessation.[1]

1. Improve ability to breathe.
2. Regain sense of smell.
3. Regain sense of taste.
4. Save money.
5. Require less sleep.
6. Increase energy.
7. Fresh breath.
8. Odor-free environment.
9. No ashtrays to empty.
10. No burn holes.
11. Cut risk of death by fire 50%.
12. Alleviate tobacco stains on teeth, fingers.
13. Decrease risks of passive smoking for family and coworkers.
14. More employable.
15. Better insurance risk and cheaper insurance premiums.
16. Improve lung cleansing through ability to cough and improved ciliary activity.
17. Improve coronary and peripheral circulation.
18. Decrease heart rate.
19. Reduce blood carbon monoxide levels.
20. Reduce perspiration.
21. Improve exercise tolerance.
22. Improve ability to perform physical work.
23. Lower grocery bills.
24. Extra time.
25. Decrease social pressure of trying to smoke in public places or at work.

[1] Reproduced, with permission, from Green HL, Goldberg RJ, Ockene JK: Cigarette smoking: The physician's role in cessation and maintenance. *J Gen Intern Med* 1988;3:75.

Table 1–3. The physician's role in smoking cessation.[1]

I. For the individual
1. Identify the smoker.
2. Present health consequences of smoking.
3. Present health benefits of cessation.
4. Assess and develop the desire to modify smoking behavior.
5. Develop and formalize a patient-centered plan for change.
6. Utilize pharmacologic adjuncts as appropriate.
7. Establish a quit day.
8. Arrange for follow-up.
9. Implement maintenance strategies.
10. Continue surveillance for relapse prevention and plan modifications as needed.

II. For society
1. Set a personal example.
2. Become involved in the legislative process.
3. Be an advisor to industry.
4. Work through public health and school health programs to prevent smoking initiation.
5. Work with voluntary agencies: American Heart Association, American Cancer Society, Lung Association, etc.
6. Work toward a smoke-free society.

[1] Reproduced, with permission, from Green HL, Goldberg RJ, Ockene JK: Cigarette smoking: The physician's role in cessation and maintenance. *J Gen Intern Med* 1988;3:75.

Recently there has been an encouraging national trend away from smoking. In 1986, only 27% of United States adults were smokers—the lowest percentage ever recorded. Smoking was slightly more common in men than in women (30% versus 24%) and in blacks than in whites. One-fourth of United States adults are former smokers.

The clinician should adopt a 3-step smoking cessation strategy with smoking patients: (1) Ask the patient about smoking and interest in quitting. (2) Motivate the patient to stop smoking. (3) Set a date to stop entirely, and follow up to find out what happens. A recent survey showed that only 44% of smokers who had seen a physician in the previous year had been advised to quit.

Pharmacologic aids have not been effective. Nicotine gum may be useful for some patients, particularly those who are in the process of quitting, but it is expensive and maintains the addiction. Table 1–2 lists immediate benefits from smoking cessation that the physician can call to the attention of smokers. Clinicians should avoid appearing to disapprove of patients who are unable to stop smoking. Concerned exhortation, family or social pressures, or the opportunity presented by an intercurrent illness may eventually enable even the most addicted chronic smoker to give up the habit. The physician's role in smoking cessation is summarized in Table 1–3.

Hypercholesterolemia

Lowering elevated LDL cholesterol concentrations reduces the risk from coronary heart disease. The

data in Table 1–4 can be used as a guide to lowering blood cholesterol. Calculated gain in life expectancy from modest decreases in blood cholesterol is low, especially in patients without other risk factors such as cigarette smoking and hypertension. Surprisingly, treatment of hypercholesterolemia confers more benefit on women than on men.

Specific methods of therapy, which include diet, weight reduction, exercise, and drugs, are discussed in Chapter 21.

Table 1–4. National Cholesterol Education Program guidelines for classification and treatment of elevated total and LDL cholesterol.[1]

I. Initial classification and recommended follow-up based on total cholesterol	
Classification (mg/dL)	
<200	Desirable blood cholesterol
200–239	Borderline to high blood cholesterol
≥240	High blood cholesterol
Recommended follow-up	
Total cholesterol <200 mg/dL	Repeat within 5 years
Total cholesterol 200–239 mg/dL	
Without definite CHD or 2 other CHD risk factors (one of which can be male sex)	Dietary information and recheck annually
With definite CHD or 2 other CHD risk factors (one of which can be male sex)	Lipoprotein analysis; further action based on LDL cholesterol level

II. Classification and treatment decisions based on LDL cholesterol		
Classification (mg/dL)		
<130	Desirable LDL cholesterol	
130–159	Borderline to high-risk LDL cholesterol	
≥160	High-risk LDL cholesterol	
	Initiation Level mg/dL	Minimal Goal mg/dL
Dietary treatment		
Without CHD or 2 other risk factors[2]	≥160	<160[3]
With CHD or 2 other risk factors[2]	≥130	<130[4]
Drug treatment		
Without CHD or 2 other risk factors[2]	≥190	<160
With CHD or 2 other risk factors[2]	≥160	<130

[1] CHD = coronary heart disease; LDL = low-density lipoprotein.
[2] Patients have a lower initiation level and goal if they are at high risk because they already have definite CHD, or because they have any 2 of the following risk factors: male sex, family history of premature CHD, cigarette smoking, hypertension, low high-density lipoprotein (HDL) cholesterol, diabetes mellitus, definite cerebrovascular or peripheral vascular disease, or severe obesity.
[3] Roughly equivalent to total cholesterol level of <240 mg/dL.
[4] As goals for monitoring dietary treatment.

Table 1–5. Classification of blood pressure in individuals aged 18 years or older.

	Category[1]
Diastolic blood pressure (DBP) (mm Hg)	
<85	Normal blood pressure
85–89	High normal blood pressure
90–104	Mild hypertension
105–114	Moderate hypertension
≥115	Severe hypertension
Systolic blood pressure (SBP) (mm Hg) when DBP <90 mm Hg	
<140	Normal blood pressure
140–159	Borderline isolated systolic hypertension
≥160	Isolated systolic hypertension

[1] A classification of borderline isolated systolic hypertension (SBP 140–159 mm Hg) or isolated systolic hypertension (SBP ≥160 mm Hg) takes precedence over a classification of high normal blood pressure (DBP 85–89 mm Hg) when both occur in the same individual. A classification of high normal blood pressure (DBP 85–89 mm Hg) takes precedence over a classification of normal blood pressure (SBP <140 mm Hg) when both occur in the same person.

Hypertension

Over 60 million adults in the USA have hypertension. In every adult age group, higher values of systolic and diastolic blood pressure carry greater risks of stroke and congestive heart failure. Even so, clinicians must be able to apply specific blood pressure criteria as a means of deciding at what levels treatment should be considered in individual cases. Table 1–5 presents a classification of hypertension based on blood pressures that was developed in 1984 by the United States National High Blood Pressure Coordinating Committee of the National Institutes of Health. During the past 15 years, there have been great improvements in detection and control of hypertension, so that now about 65% of hypertensive patients in the United States are adequately controlled, compared with only 16% in 1972.

CANCER

Primary Prevention

Cigarette smoking is the most important preventable cause of cancer. Primary prevention of skin cancer consists of restricting exposure to ultraviolet light by wearing appropriate clothing and use of sunscreens. Prevention of occupationally induced cancers involves minimizing exposure to carcinogenic substances such as asbestos, ionizing radiation, and benzene compounds.

Secondary Prevention

Generally recognized and used techniques exist for secondary prevention of cancers of the breast,

Table 1–6. American Cancer Society (1983) guidelines for the early detection of cancer in people without symptoms.

Test or Procedure	Sex	Age	Frequency
Sigmoidoscopy	M&F	Over 50	Every 3–5 years after 2 negative examinations 1 year apart.
Stool test for occult blood	M&F	Over 50	Every year.
Digital rectal examination	M&F	Over 40	Every year.
Papanicolaou test	F	20–65; under 20 if sexually active.	At least every 3 years after 2 negative examinations 1 year apart.
Pelvic examination	F	20–40	Every 3 years.
		Over 40	Every year.
Endometrial tissue sample	F	At menopause; women at high risk.[1]	At menopause.
Breast self-examination	F	Over 20	Every month.
Breast physical examination	F	20–40	Every 3 years.
		Over 40	Every year.
Mammography	F	40–49	Only if major risk factors are present.
		50+	Every year.
Chest x-ray			Not recommended.
Sputum cytologic examination			Not recommended.
Health counseling and cancer checkup[2]	M&F	Over 20	Every 3 years.
		Over 40	Every year.

[1] History of infertility, obesity, failure of ovulation, abnormal uterine bleeding, or estrogen therapy.
[2] To include examination for cancers of the thyroid, testicles, prostate, ovaries, lymph nodes, oral region, and skin.

colon, and cervix through cancer screening procedures (Table 1–6). Screening for other cancers in normal asymptomatic or even high-risk segments of the population is not generally recommended.

ACCIDENTS & VIOLENCE

Accidents remain the most important cause of loss of potential years of life before age 65, followed by cancer, heart disease, and suicide and homicide. Despite incontrovertible evidence that seat belt use protects against serious injury and death in motor vehicle accidents, fewer than 30% of all adults use seat belts routinely. As part of routine medical care, physicians should try to educate their patients about seat belts, drinking and driving, and gun safety in the home. Males age 16–35 are at especially high risk for serious injury and death from accidents and violence.

THE PHYSICIAN-PATIENT RELATIONSHIP

One of the most effective therapeutic tools available to the clinician is a confident and trusting relationship with the patient. Good communication is essential to maximize the effects of therapy by ensuring patient compliance, helping patients to understand and choose among therapeutic options, and enabling them to bear the burden of serious illness and death. An expanding body of knowledge attests to the improved health outcomes of patients who enjoy positive relationships with their physicians. The old French folk saying, "To cure sometimes, to relieve often, to comfort always," is as apt today as it was 5 centuries ago.

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GENERAL SYMPTOMS

PAIN

Approach to the Patient

Pain is the most common symptom causing patients to seek medical attention. It can provide the clinician with important diagnostic information. Because pain is a highly subjective phenomenon, the patient's description may be difficult to interpret. Information about the timing, nature, location, and radiation is crucial for proper treatment; the same is true for aggravating or alleviating factors.

Many emotional and cultural factors influence the

perception of pain. The primary cause (eg, trauma, infection), pathogenesis (eg, inflammation, ischemia), and contributory factors (eg, recent changes in life situation, symbolic attributes of pain) must all be sought.

Administration of a systemic analgesic is the usual method of pain management, but many other nonpharmacologic methods are useful. Examples include graded physical activity, simple reassurance, support groups, biofeedback training, and transcutaneous electrical nerve stimulation.

1. DRUGS FOR SEVERE PAIN

The addicting analgesics—narcotics, opioids—are indicated for severe pain that cannot be relieved with less effective agents. Examples are the pain of severe trauma, myocardial infarction, ureteral stone, and postoperative pain. Table 1–7 lists the addicting analgesics with some of their characteristics.

These drugs have pharmacologic similarities to opium. They are employed principally for the control of severe pain, but they also act to suppress severe cough and gastrointestinal motility. All can produce **physical dependence,** but to varying degrees and after varying periods of use. The risk of addiction or habituation should not prevent their appropriate use, especially in the management of terminal illness.

A common error in management of pain from cancer is to prescribe insufficient doses "prn" rather than adequate doses around-the-clock at stated intervals. In such cases, the major goal of management should be patient comfort.

The effects of all narcotics are reversed by naloxone. Continued use produces tolerance, so that increasing doses are needed to produce the same analgesic effect.

Contraindications

The narcotic drugs are contraindicated in some acute illnesses. In acute abdomen, for example, the pattern of pain may provide important diagnostic clues. However, some analgesia may be necessary in order to perform an adequate physical examination for diagnostic purposes. In acute head injuries, these drugs interfere with clinical interpretation of neurologic changes.

Adverse Effects

The drugs in this category have the potential adverse effects listed below. Patients with hypothyroidism, adrenal insufficiency, hypopituitarism, reduced blood volume, and severe debility are particularly apt to suffer adverse effects from the addicting analgesics.

(1) Opioid narcotics should be given with great caution to patients with pulmonary insufficiency, because of dose-dependent respiratory depression.

(2) Central nervous system effects include seda-

Table 1–7. Useful narcotic analgesics.[1]

	Approximate Equivalent Dose (mg)	Oral:Parenteral Potency Ratio	Duration of Analgesia (hours)	Maximum Efficacy	Addiction/Abuse Liability
Morphine	10	Low	4–5	High	High
Hydromorphone (Dilaudid)	1.5	Low	4–5	High	High
Oxymorphone (Numorphan)	1.5	Low	3–4	High	High
Methadone (Dolophine)	10	High	4–6	High	High
Meperidine (Demerol)	60–100	Low	2–4	High	High
Codeine	30–60[2]	High	3–4	Low	Medium
Oxycodone[3] (Percodan)	4.5[2]	Medium	3–4	Moderate	Medium
Hydrocodone[4] (Vicodin, others)	5[2]	Medium	3–5	Moderate	Medium
Propoxyphene (Darvon)	60–120[2]	Oral use only	4–5	Very low	Low/medium
Pentazocine (Talwin)	30–50[2]	Medium	3–4	Moderate	Low/medium

[1] Modified and reproduced, with permission, from: Katzung BG (editor): *Basic & Clinical Pharmacology,* 3rd ed. Appleton & Lange, 1987.
[2] Analgesic efficacy at this dose not equivalent to 10 mg of morphine. See text for explanation.
[3] Available only in tablets containing aspirin (Percodan) or acetaminophen (Percocet).
[4] In tablets or capsules with acetaminophen or aspirin.