Dietetics, Nursing, Pharmacy, and Therapy Occupations

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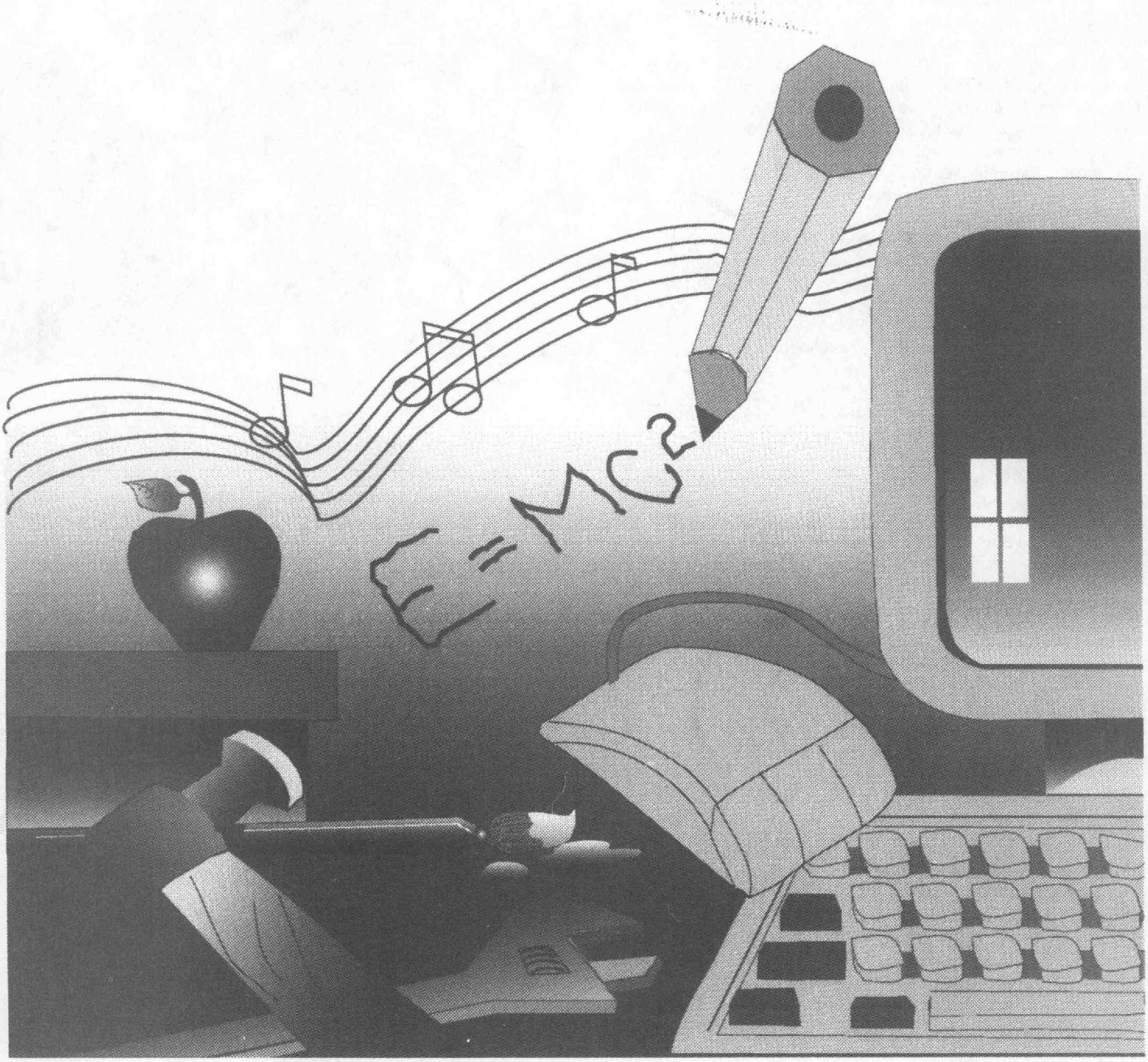


Dietitians and Nutritionists

(D.O.T. 077 except .121-010)

Nature of the Work

Dietitians and nutritionists plan nutrition programs and supervise the preparation and serving of meals. They help prevent and treat illnesses by promoting healthy eating habits. They scientifically evaluate a client's diet and suggest modifications such as cutting back on salt for those with high blood pressure or reducing fat and sugar intake for overweight persons.

Dietitians run food service systems for institutions such as hospitals and schools and promote sound eating habits through education and research. Major areas of practice are clinical, community, and administrative (management) dietetics. Dietitians also work as educators and researchers.

Clinical dietitians provide nutritional services for patients in institutions such as hospitals and nursing homes. They assess a patient's nutritional needs, develop and implement a nutrition program, and evaluate and report the results. They also confer with doctors and other health care professionals in order to coordinate medical and nutritional needs. Some clinical dietitians specialize in the management of obese patients, care of the critically ill, or care of renal and diabetic patients. In addition, clinical dietitians in nursing homes or small hospitals may also run the food service department.

Community dietitians counsel individuals and groups on nutritional practices designed to prevent disease and to promote good health. Working in such places as public health clinics, home health agencies, and health maintenance organizations, they evaluate individual needs, establish nutritional care plans, and instruct individuals and their families. Dietitians working in a home health setting may also provide instruction on grocery shopping and preparation of special infant formulas.

Popular interest in nutrition has led to opportunities in food manufacturing, advertising, and marketing, where dietitians analyze foods, prepare literature for distribution, or report on issues such as dietary fiber or vitamin supplements.

Administrative dietitians are responsible for large-scale meal planning and preparation in such places as health care facilities, company cafeterias, prisons, and schools. They select, train, and direct other dietitians and food service workers; budget for and purchase food, equipment, and supplies; enforce sanitary and safety regulations; and prepare records and reports.

Research dietitians are usually employed in academic medical centers or educational institutions. Using established research methods and analytical techniques, they conduct studies on subjects that link diet and health.

Working Conditions

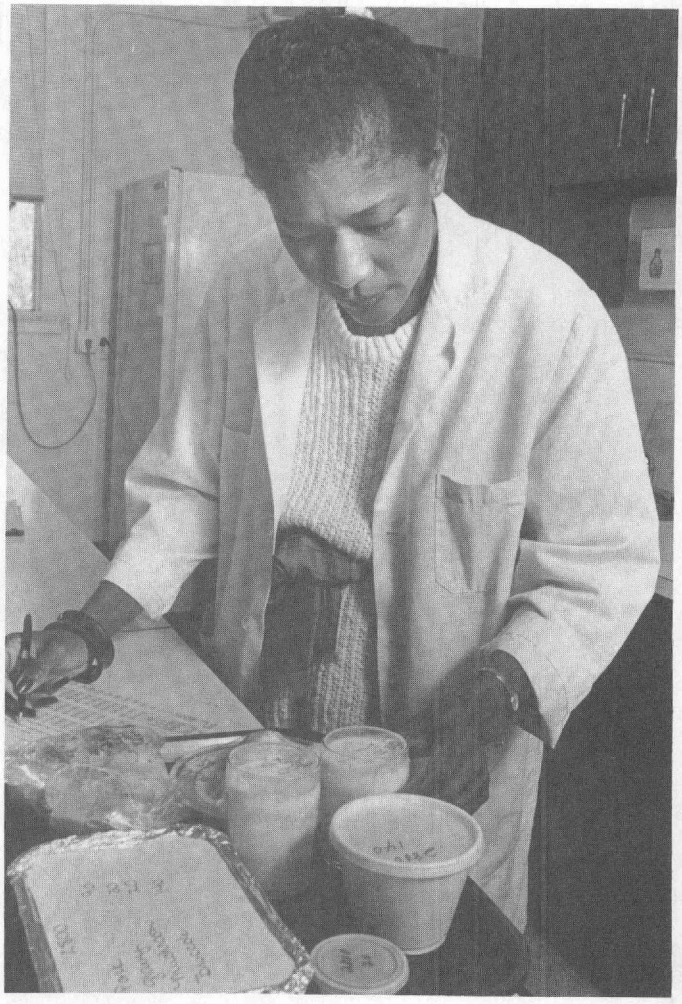
Most dietitians work about 40 hours a week, although some weekend or shift work is possible. About 1 dietitian in 5 works part time.

Dietitians and nutritionists spend much of their time in clean, well-lighted, and well-ventilated areas. However, some dietitians spend time in hot, steamy kitchens. Dietitians and nutritionists may be on their feet for most of the workday.

Employment

Dietitians and nutritionists held about 45,000 jobs in 1990. About half were in hospitals and nursing homes.

State and local governments provided about 1 job in 5, in prisons, health departments and other public health related areas. Other jobs were in social service agencies, including residential care facilities, school systems, colleges and universities, employer-sponsored food service programs, and the Federal Government—mostly in the Veterans Administration. Others were employed by firms that provide food services on contract to such facilities as colleges and universities, airlines, and company cafeterias.



Dietitians design individual nutrition programs.

Some dietitians were self-employed, working as consultants to facilities like hospitals and nursing homes and also seeing individual clients.

Training, Other Qualifications, and Advancement

The basic educational requirement is a bachelor's degree with a major in dietetics, foods and nutrition, or food service systems management. Students take courses in foods, nutrition, institution management, chemistry, biology, microbiology, and physiology. Other courses are business, mathematics, statistics, computer science, psychology, sociology, and economics.

The Commission on Dietetic Registration of the American Dietetic Association awards the Registered Dietitian credential to those who pass a certification exam after completing their academic education and supervised experience. As of 1990, there were 301 bachelor's degree programs and about 130 graduate programs for those interested in research, advanced clinical positions, or public health—where a graduate degree is usually needed. Supervised practice experience can be acquired in one of three ways. There are 59 coordinated programs that combine academic and supervised practice experience in a 4-year program. The other two options require completion of 900 hours of supervised practice experience—either in one of the 96 accredited internships or in one of the 73 approved preprofessional practice programs. Internships are full-time programs lasting 9 to 12 months, while preprofessional practice programs can be pursued part time over a 2-year period or full time for 6 months.

Recommended high school courses include biology, chemistry, health, home economics, mathematics, and communications.

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Experienced dietitians may advance to assistant, associate, or director of a dietetic department or become a consultant. Clinical specialization offers another path to career advancement. Other dietitians leave the occupation and become sales representatives for equipment or food manufacturers.

Job Outlook

Employment of dietitians is expected to grow as fast as the average for all occupations through the year 2005 as demand grows for meals and nutritional counseling in such settings as hospitals, nursing homes, schools, prisons, community health programs, and health clubs. Public interest in nutrition and the emphasis on health education and prudent lifestyles will add to the demand. Many job openings will also result from the need to replace experienced workers who leave the occupation.

Employment of dietitians in hospitals will grow slowly as more hospital food service operations are contracted out to private firms. On the other hand, rapid growth in employment is expected in nursing homes as the number of very old people rises sharply; in contract providers of food services; in residential care facilities; and in other social services.

Earnings

According to a national survey conducted by the University of Texas Medical Branch, the median salary for dietitians in hospitals and medical schools was about $27,268 a year in 1990. The average minimum was about $23,320 and the average maximum was about $34,833.

The starting salary in the Federal Government for those with bachelor's degree was $16,973 in 1991. The average salary for all federally employed registered dietitians was $36,247.

Related Occupations

Dietitians and nutritionists apply the principles of nutrition in a variety of situations. Workers with duties similar to those of administrative dietitians include home economists and food service managers. Nurses and health educators often provide services related to those of community dietitians.

Sources of Additional Information

For a list of academic programs, scholarships, and other information about dietetics, contact:

☛ The American Dietetic Association, 216 West Jackson Blvd., Suite 800, Chicago, IL 60606-6995.

Licensed Practical Nurses

(D.O.T. 079.374-014)

Nature of the Work

Licensed practical nurses (L.P.N.'s), or licensed vocational nurses (L.V.N.'s) as they are called in Texas and California, care for the sick, injured, convalescing, and handicapped, under the direction of physicians and registered nurses. (The work of registered nurses is described elsewhere in the *Handbook*.)

Most L.P.N.'s provide basic bedside care. They take such vital signs as temperature, blood pressure, pulse, and respiration. They also treat bedsores, prepare and give injections and enemas, apply dressings, give alcohol rubs and massages, apply ice packs and hot water bottles, and insert catheters. They help patients with bathing, dressing, and personal hygiene, feed them and record food and liquid intake and output, keep them comfortable, and care for their emotional needs. In States where the law allows, they may administer prescribed medicines or start intravenous fluids. Some L.P.N.'s help deliver, care for, and feed infants. Some experienced L.P.N.'s supervise nursing assistants and aides.

L.P.N.'s in nursing homes, in addition to providing routine bedside care, may also help evaluate residents' needs, develop care plans, and supervise nursing aides. In doctors' offices and clinics, including health maintenance organizations, they may also make appointments, keep records, and perform other clerical duties. L.P.N.'s who work in home health may also prepare meals and teach family members simple nursing tasks.

Working Conditions

Most licensed practical nurses in hospitals and nursing homes work a 40 hour week, but since patients need round-the-clock care, some work nights, weekends, and holidays. They often stand for long periods and help patients move in bed, stand, or walk. They also face the stress of working with sick patients and their families.

Hospital-based L.P.N.'s face hazards from caustic chemicals, radiation, and infectious diseases such as AIDS and hepatitis. L.P.N.'s also are subject to back injuries when moving patients and shock from electrical equipment.

L.P.N.'s employed in nursing homes often face heavy workloads due to chronic understaffing. In addition, the people they take care of may be confused, irrational, agitated, or uncooperative.

In private homes, L.P.N.'s usually work 8 to 12 hours a day and go home at night. Private duty nursing affords a great deal of freedom in setting one's own work hours.

Employment

Licensed practical nurses held about 644,000 jobs in 1990. About a quarter worked part time. Almost half of all L.P.N.'s worked in hospitals, almost one-quarter worked in nursing homes and a tenth in doctors' offices and clinics. Others worker for temporary help agencies, home health care services or government agencies.

L.P.N.'s training takes about 1 year.

Training, Other Qualifications, and Advancement

All States require L.P.N.'s to pass a licensing examination after completing a State-approved practical nursing program. A high school diploma is usually required for entry, but some programs accept people who have completed less.

In 1989, approximately 1,200 State-approved programs provided practical nursing training. Trade, technical, or vocational schools offered almost half of these programs, while community and junior colleges provided more than a third. Some programs were offered in high schools, hospitals, and colleges and universities.

Most practical nursing programs last about 1 year and include both classroom study and clinical practice. Classroom study covers basic nursing concepts, principles, and related subjects, including anatomy, physiology, medical-surgical nursing, pediatrics, obstetrics, psychiatric nursing, administration of drugs, nutrition, and first aid. Supervised clinical experience is usually in a hospital, but sometimes also includes other settings.

L.P.N.'s should have a caring, sympathetic nature. They should be emotionally stable because work with the sick and injured can be stressful. As part of a health care team, they must be able to follow orders and work under close supervision.

Job Outlook

Employment of L.P.N.'s is expected to increase much faster than the average for all occupations through the year 2005, in response to the long-term care needs of a rapidly growing population of very old people and to the general growth of health care.

Nursing homes will offer the most new jobs for L.P.N.'s as the number of aged and disabled persons in need of long-term care rises rapidly. In addition to caring for the aged, nursing homes may be called on to care for the increasing number of patients who have been released from the hospital before they are fully recovered. Finally, recent State and Federal regulations require nursing homes to employ more L.P.N.'s.

Very rapid growth is also expected in such residential care facilities as board and care homes, old age homes, and group homes for the mentally retarded.

Employment of L.P.N.'s in hospitals is not expected to increase much, largely because the number of inpatients, with whom most work, is not expected to increase much. If hospitals continue to face a scarcity of R.N.'s, however, they may employ more L.P.N.'s than projected.

Employment is projected to grow very rapidly in physicians' offices and clinics, including health maintenance organizations—a fast-growing segment of the health care industry—and in the temporary help sector. A growing number of licensed practical nurses will also provide home care. As in most other occupations, replacement needs will be the main source of job openings.

Job prospects depend on supply as well as demand. The number of people completing L.P.N. training dropped sharply during the mid 1980's, but has begun to increase again. Unless the number increases very sharply, job prospects should remain good.

Earnings

Median weekly earnings of L.P.N.'s who worked full time in 1990 were $377. The middle 50 percent earned between $312 and $456. The lowest 10 percent earned less than $267; the top 10 percent, more than $539.

L.P.N.'s in nursing homes had median earnings of $9.92 an hour in 1991, according to a survey by the Hospital Compensation Service, Hawthorne, NJ.

L.P.N.'s employed full-time in private hospitals averaged $10.21 an hour, excluding premium pay for overtime and for work on weekends, holidays, and late shifts in January 1991. Among 19 metropolitan areas studied separately, earnings ranged from $9.67 in Dallas to $14.43 in San Francisco. Part-time L.P.N.'s averaged $10.70 a hour.

Related Occupations

Other jobs that involve working closely with people while helping them include emergency medical technician, social service aide, human service worker, and teacher aide.

Sources of Additional Information

A list of State-approved training programs and information about practical nursing are available from:

☛ Communications Department, National League for Nursing, 350 Hudson St., New York, NY 10014.

☛ National Association for Practical Nurse Education and Service, Inc., 1400 Spring St., Suite 310, Silver Spring, MD 20910.

For information about a career in practical nursing, contact:

☛ National Federation of Licensed Practical Nurses, Inc., P.O. Box 1088, Raleigh, NC 27619.

Information about employment opportunities in Veterans Administration medical centers is available from local VA medical centers and also from:

☛ Title 38 Employment Division, (054D), Veterans Administration, 810 Vermont Ave. NW., Washington, DC 20420.

For information on nursing careers in hospitals, contact:

☛ American Hospital Association, Division of Nursing, 840 North Lake Shore Dr., Chicago, IL 60611.

For a copy of *Health Careers in Long-Term Care*, write:

☛ American Health Care Association, 1201 L St. NW., Washington, DC 20005.

Nursing Aides and Psychiatric Aides

(D.O.T. 354.374-010, .377-010, and .677-010; 355.377-014 and -018, .674-014, -018, and -026)

Nature of the Work

Nursing aides and psychiatric aides help care for physically or mentally ill, injured, disabled, or infirm individuals confined to hospitals, nursing or residential care facilities, and mental health settings. (Homemaker-home health aides, whose duties are similar but who work in clients' homes, are discussed elsewhere in the *Handbook*.)

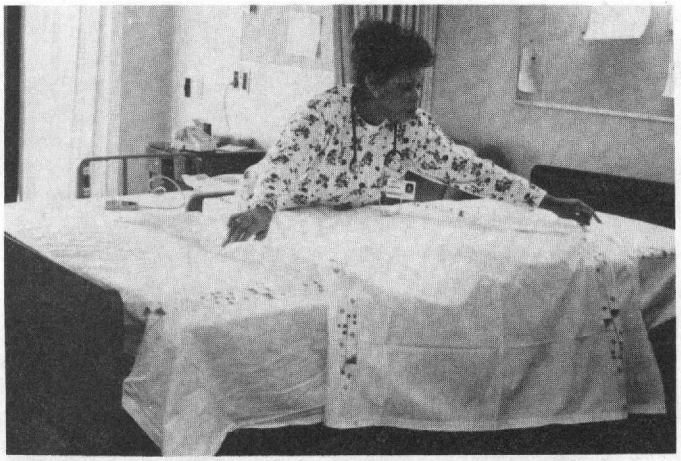
Nursing aides, also known as nursing assistants or hospital attendants, work under the supervision of nursing and medical staff. They answer patients' call bells, deliver messages, serve meals, make beds, and feed, dress, and bathe patients. Aides may also give massages, provide skin care to patients who cannot move, take temperatures, pulse, respiration, and blood pressure, and help patients get in and out of bed and walk. They may also escort patients to operating and examining rooms, keep patients' rooms neat, set up equipment, or store and move supplies. Aides observe patients' physical, mental, and emotional conditions and report any change to the nursing or medical staff.

Nursing aides employed in nursing homes are sometimes called geriatric aides. They are often the principal caregivers in nursing homes, having far more contact with residents than other members of the staff do. Since residents may stay in a nursing home for months or even years, aides are expected to develop ongoing relationships with them and respond to them in a positive, caring way.

Psychiatric aides are also known as mental health assistants, psychiatric nursing assistants, or ward attendants. They care for mentally impaired or emotionally disturbed individuals. They work under a team that may include psychiatrists, psychologists, psychiatric nurses, social workers, and therapists. In addition to helping patients dress, bathe, groom, and eat, psychiatric aides socialize with them, and lead them in educational and recreational activities. Psychiatric aides may play games such as cards with the patients, watch television with them, or participate in group activities such as sports or field trips. They observe patients and report any signs which might be important for the professional staff to know. If necessary, they help restrain unruly patients, and accompany patients to and from wards for examination and treatment. Because they have the closest contact with patients, psychiatric aides have a great deal of influence on patients' outlook and treatment.

Working Conditions

Most full-time aides work about 40 hours a week, but because patients need care 24 hours a day, some aides work evenings, nights, weekends, and holidays. Many work part-time. Aides spend many



Employment of nursing aides will grow rapidly as more people enter nursing homes.

hours standing. Since they may have to move partially paralyzed patients in and out of bed or help them stand or walk, aides must guard against back injury.

Nursing aides often have unpleasant duties; they empty bed pans, change soiled bed linens, and care for disoriented and irritable patients. Psychiatric aides are often confronted with violent patients. While their work can be emotionally draining, many aides gain satisfaction from assisting those in need.

Employment

Nursing aides held about 1,274,000 jobs in 1990, and psychiatric aides held about 100,000 jobs. About one-half of all nursing aides worked in nursing homes, and about one-fourth worked in hospitals. Some worked in residential care facilities or in private households. Most psychiatric aides worked in State and county mental institutions, psychiatric units of general hospitals, private psychiatric facilities, community mental health centers, residential facilities for the developmentally disabled, halfway houses, and drug abuse and alcoholism treatment programs.

Training, Other Qualifications, and Advancement

In many cases, neither a high school diploma nor previous work experience is necessary for a job as a nursing or psychiatric aide. A few employers, however, require some training or experience. Hospitals may require experience as a nursing aide or home health aide. Nursing homes often hire inexperienced workers with the understanding that they complete 75 hours of mandatory training and pass a competency evaluation program within 4 months of employment. Aides who complete the program are placed on the State registry of nursing aides. Some States require psychiatric aides to complete a formal training program.

These occupations can offer young people an entry into the world of work. The flexibility of night and weekend hours also provides high school and college students a chance to work during the school year. The work is also open to middle-aged and older men and women.

Nursing aide training is offered in high schools, vocational-technical centers, many nursing homes, and community colleges. Courses cover body mechanics, nutrition, anatomy and physiology, infection control, and communications skills. Personal care skills such as the bathing, feeding, and grooming of patients are also taught.

Some facilities, other than nursing homes, provide classroom instruction for newly hired aides, while others rely exclusively on informal on-the-job instruction from a licensed nurse or an experienced aide. Such training may last several days to a few months. From time to time, aides may also attend lectures, workshops, and in-service training.

Applicants should be healthy, tactful, patient, understanding, emotionally stable, dependable, and have a desire to help people. They should also be able to work as part of a team, and be willing to perform repetitive, routine tasks.

Opportunities for advancement within these occupations are limited. Aides may be able to enter other health occupations, but generally need additional formal training. Some employers and unions provide opportunities by simplifying the educational paths to advancement. Experience as an aide can also help individuals decide whether to pursue a career in the health care field.

Job Outlook

Job prospects for nursing aides should be very good through the year 2005. Employment of nursing aides is expected to grow much faster than the average for all occupations in response to an emphasis on rehabilitation and the long-term care needs of a rapidly growing population of those 75 years old and older. Employment will increase as a result of the expansion of nursing homes and other long-term care facilities for people with chronic illnesses and disabling conditions, many of whom are elderly. Also increasing employment of nursing aides will be modern medical technology which, while saving more lives, increases the need to provide extended care. As a result, nursing and personal care facilities are expected to grow very rapidly, and to provide most of the new jobs for nursing aides.

Employment of psychiatric aides is expected to grow faster than the average for all occupations. Employment will rise in response to the sharp increase in the number of older persons—many of whom will require mental health services. Employment of aides in private psychiatric facilities, community mental health centers, and halfway houses is likely to grow because of increasing public acceptance of formal treatment for drug abuse and alcoholism, and a lessening of the stigma attached to those receiving mental health care. While employment in private psychiatric facilities may grow, employment in public mental hospitals is likely to be stagnant due to constraints on public spending.

Replacement needs will constitute the major source of openings for aides. Turnover is high, a reflection of modest entry requirements, low pay, and lack of advancement opportunities.

Earnings

Median annual earnings of nursing and psychiatric aides who worked full time in 1990 were about $13,100. The middle 50 percent earned between $10,100 and $17,300. The lowest 10 percent earned about $8,100 or less. The top 10 percent earned $22,400 or more.

Nursing aides who worked full-time in private hospitals averaged $7.63 per hour, excluding premiums paid for overtime, and for work on weekends, holidays, and late shifts in January 1991. Among 19 metropolitan areas studied separately, earnings ranged from $6.47 in Dallas to $10.98 in New York. Part-time nursing aides averaged $7.05 per hour.

Aides working in nursing homes earned a median annual salary of about $11,500 in 1991, according to a survey by the Hospital Compensation Service, Hawthorne, NJ.

Aides in hospitals generally receive at least 1 week's paid vacation after 1 year of service. Paid holidays and sick leave, hospital and medical benefits, extra pay for late-shift work, and pension plans also are available to many hospital and some nursing home employees.

Related Occupations

Nursing aides and psychiatric aides help people who need routine care or treatment. So do homemaker-home health aides, childcare attendants, companions, occupational therapy aides, and physical therapy aides.

Sources of Additional Information

For information on nursing careers in hospitals, contact:

☛ American Hospital Association, Division of Nursing, 840 North Lake Shore Dr., Chicago, IL 60611.

For a copy of *Health Careers in Long-Term Care*, write:

☛ American Health Care Association, 1201 L St. NW., Washington, DC 20005.

Information about employment also may be obtained from local hospitals, nursing homes, and psychiatric facilities.

Occupational Therapists

(D.O.T. 076.21-010, 076.167-010)

Nature of the Work

Occupational therapists help individuals with mentally, physically, developmentally, or emotionally disabling conditions to develop, recover, or maintain daily living and work skills. They not only help patients improve basic motor functions and reasoning abilities, but also to compensate for permanent loss of function. With support and direction, patients learn (or relearn) many of the day-to-day skills necessary to establish an independent, productive, and satisfying lifestyle.

Occupational therapists use activities of all kinds as treatment, ranging from cooking to using a computer. Therapists may first help patients learn to care for their daily needs, such as dressing and eating, and then progress to helping them find and hold a job. Practical activities increase strength and dexterity, while paper and pencil games may be used to improve visual acuity and the ability to discern patterns. A patient suffering short-term memory loss, for instance, might be encouraged to make lists to aid recall. One with coordination problems might be given extra tasks to improve eye-hand coordination. Computer programs have been designed to help patients improve decisionmaking, abstract reasoning, problem solving, and perceptual skills, as well as memory, sequencing, and coordination—all of which are important for independent living.

For those with permanent functional disabilities, such as spinal cord injuries, cerebral palsy, or muscular dystrophy, therapists provide such adaptive equipment as wheelchairs, splints, and aids for eating and dressing. They also design or make special equipment needed at home or at work. Therapists develop and teach patients to operate computer-aided adaptive equipment, such as microprocessing devices that permit individuals with severe limitations to communicate, walk, or operate telephones and television sets.

Recording patients' activities and progress is an important part of an occupational therapist's job. Accurate records are essential for evaluating patients, reporting to physicians, and billing.

Some occupational therapists work exclusively with individuals in a particular age group or with particular disabilities. In schools, for example, they evaluate children's abilities, recommend therapy, modify classroom equipment, and in general, help children participate as fully as possible in school programs and activities.

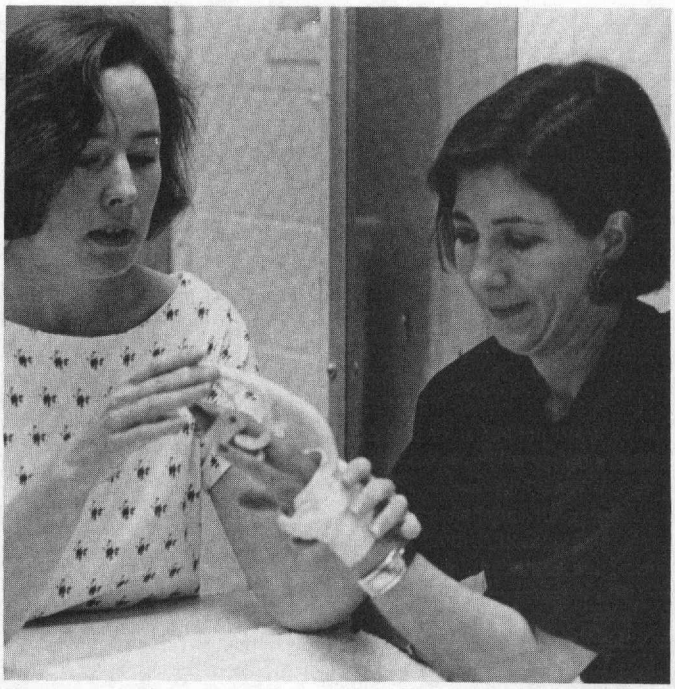
Occupational therapists in mental health settings treat mentally ill, mentally retarded, or emotionally disturbed individuals. Disabling conditions may include alcoholism, drug abuse, depression, eating disorders, and stress-related disorders. To treat these problems, therapists choose activities that help people learn to cope with daily life. Activities often emphasize time management skills, budgeting, shopping, homemaking, and use of public transportation.

Working Conditions

Occupational therapists in hospitals and other health care settings generally work a regular 40-hour week. Those in schools may also participate in meetings and other activities, during and after the school day. In large rehabilitation centers, therapists may work in spacious rooms equipped with machines, tools, and other devices that may generate noise. Therapists may work in a kitchen when using food preparation as therapy. The job can be physically tiring because therapists are on their feet much of the time. Those providing home health care may spend several hours a day driving from appointment to appointment. Therapists also face hazards such as backstrain from lifting and moving patients and equipment.

Employment

Occupational therapists held about 36,000 jobs in 1990. The largest number of jobs were in hospitals, including many in rehabilitation and psychiatric hospitals. School systems are the second largest employer of occupational therapists. Other major employers include nursing homes, community mental health centers, adult day care programs, outpatient clinics, and residential care facilities.



Most occupational therapists work in hospitals.

A small but rapidly growing number of occupational therapists are in private practice. Some are solo practitioners, while others are in group practices. They see patients referred to them by physicians or other health professionals, or provide contract or consulting services to nursing homes, adult day care programs, and home health agencies.

Training, Other Qualifications, and Advancement

A bachelor's degree in occupational therapy is the minimal requirement for entry into this field. In addition, 36 states, Puerto Rico, and the District of Columbia require a license to practice occupational therapy. To obtain a license, applicants must have a degree or a post-baccalaureate certificate from an accredited educational program and pass a national certification examination given by the American Occupational Therapy Certification Board. Those who pass the test are awarded the title of registered occupational therapist.

In 1990, entry level education was offered in 65 bachelor's degree programs; 10 post-baccalaureate certificate programs, for students with a degree other than occupational therapy; and 15 entry level master's degree programs. Most schools have full-time programs, although a growing number also offer weekend or part-time programs.

Occupational therapy coursework includes physical, biological, and behavioral sciences and the application of occupational therapy theory and skills. Completion of 6 months of supervised clinical internship is also required.

Persons considering this profession should take high school courses in biology, chemistry, physics, health, art, and the social sciences. College admissions offices also look with favor on applicants who have paid or volunteer experience in the health care field. They know that exposure to the health care field, especially occupational therapy, helps prevent any misconceptions a student might have about the occupation.

Warmth and patience are needed to inspire both trust and respect. Ingenuity and imagination in adapting activities to individual needs are assets. Individuals working in home health care must be able to successfully adapt to a variety of settings.

Job Outlook

Employment of occupational therapists is expected to increase much faster than the average for all occupations through the year 2005 due to anticipated growth in demand for rehabilitation and long-term care services.

Several factors are increasing the need for rehabilitative services. Medical advances are now making it possible for more patients with critical problems to survive. These patients, however, may need extensive therapy. Also, there is the anticipated demand generated by the baby-boom generation's move into middle age, a period during which the incidence of heart attack and stroke increases. Additional services will also be demanded by the population 75 years of age and above, a rapidly growing age group that suffers from a very high incidence of disabling conditions. Finally, additional therapists will be needed to help prepare handicapped children to enter special education programs, as required by recent Federal legislation.

Due to rapid industry growth and more intensive care, hospitals will continue to employ the largest number of occupational therapists. Hospitals will also need occupational therapists to staff their expansion into home health care, rehabilitation programs, and outpatient clinics.

Schools will remain the second largest employer of occupational therapists. Moderate growth will result from expansion of the school-age population and extended services for handicapped students.

The field of private practice will continue to provide opportunities for occupational therapists willing to provide services to individual clients, and follow-up and long-term services to patients recently released from the hospital. Private practitioners will also find opportunities working as a contractor or consultant to hospitals, nursing homes, rehabilitation centers, group homes, and industries. Encouraging movement into private practice is a legislative change permitting occupational therapists to bill Medicare directly for services provided. Previously, such billings were submitted through a Medicare-approved facility such as a hospital or home health agency

The home health field is expected to grow very fast. The rapidly growing number of people age 75 and older who are more likely to need home health care, and the greater number of procedures and lifesaving technologies which require at-home followup will encourage this growth.

Earnings

According to a national survey conducted by the University of Texas Medical Branch, the median annual salary for occupational therapists in hospitals and medical schools was about $30,500 in 1990. The average minimum salary was $26,500 and the average maximum salary was $38,500. Some States classify occupational therapists employed in public schools as teachers and pay accordingly. According to the National Education Association, elementary school teachers earned an average of about $32,400 during the 1990-91 school year, and secondary school teachers earned an average of about $33,700.

Related Occupations

Occupational therapists use specialized knowledge to help individuals perform daily living skills and achieve maximum independence. Other workers performing similar duties include orthotists, prosthetists, physical therapists, speech pathologists and audiologists, rehabilitation counselors, recreational therapists, art therapists, music therapists, dance therapists, horticultural therapists, and manual arts therapists.

Sources of Additional Information

For more information on occupational therapy as a career, a list of education programs, and requirements for certification, write to:

☛ American Occupational Therapy Association, P.O. Box 1725, 1383 Piccard Dr., Rockville, MD 20849-1725.

Pharmacists

(D.O.T. 074.161-010 and -014)

Nature of the Work

Pharmacists measure, count, mix, and dispense drugs and medicines prescribed by physicians, podiatrists, and dentists. Pharmacists must understand the use, composition, and effects of drugs and how they are tested for purity and strength. Compounding—the actual mixing of ingredients to form powders, tablets, capsules, ointments, and solutions—is only a small part of a pharmacist's practice, because most medicines are produced by pharmaceutical companies in the prescribed dosage and form. Pharmacists also advise physicians and other health practitioners on the selection, dosages, and effects and side effects of medications.

Besides dispensing medicines, pharmacists in community (retail) pharmacies answer customers' questions about prescription drugs. They also answer questions about over-the-counter drugs and make recommendations after asking a series of health questions, such as whether the customer is on any other medication. They also give advice about durable medical equipment and home health care supplies.

Many pharmacists create computerized records of the patients' drug therapies and medical profiles. Pharmacists use these medication profiles to insure that harmful drug interactions do not occur and to monitor patient compliance with the doctor's instructions—by comparing, when a refill is ordered, how long it took the patient to finish the drug versus the prescribed dosage. Those who are small-business owners buy and sell nonhealth-related merchandise, hire and supervise personnel, and oversee the general operation of the pharmacy.

Pharmacists in hospitals and clinics dispense medications and advise the medical staff on the selection and effects of drugs, in some cases making rounds with them. They may make sterile solutions, buy medical supplies, teach health professions students, and perform administrative duties. They also advise patients on the use of drugs, monitor drug regimens, and evaluate drug use.

Pharmacotherapists specialize in drug therapy and work closely with physicians. They may make hospital rounds with physicians—talking to patients and monitoring pharmaceutical use.

Radiopharmacists or nuclear pharmacists, apply principles and practices of pharmacy and radiochemistry to produce radioactive drugs used for diagnosis and therapy.

Nutrition support pharmacists help determine and prepare drugs needed for nutrition. Some pharmacists work in oncology (cancer) and psychiatric drug treatment.

Working Conditions

Pharmacists usually work in a clean, well-lighted, and well-ventilated area that resembles a small laboratory with shelves lined with hundreds of drugs. Pharmacists spend most of their time on their feet. When working with potentially dangerous or sterile pharmaceutical products, pharmacists wear gloves and masks and work with special protective equipment. Many community and hospital pharmacies are open long hours or around the clock, so pharmacists may work evenings, nights, weekends, and holidays.

About 1 out of 7 pharmacists worked part time. Most full-time salaried pharmacists worked about 40 hours a week. Some however, worked more than 50 hours a week. Most self-employed pharmacists worked more than 50 hours a week.

Employment

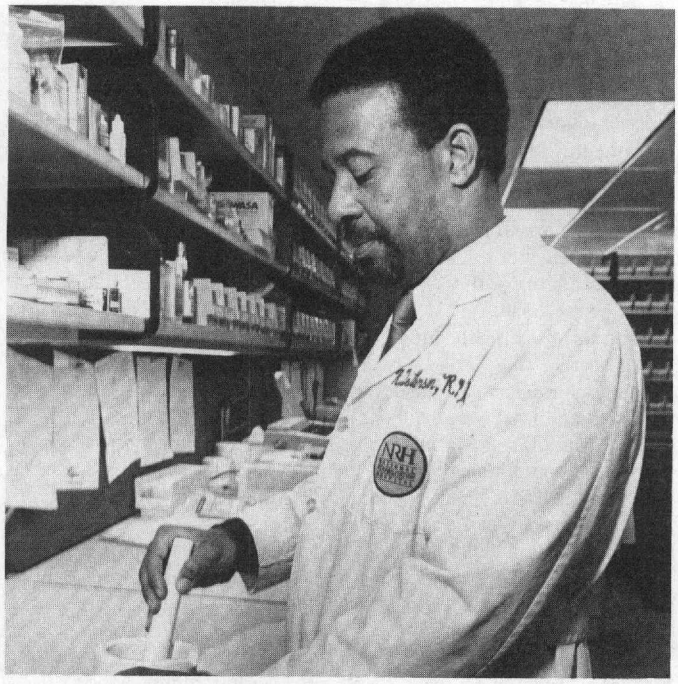
Pharmacists held about 169,000 jobs in 1990. More than two thirds were in community pharmacies, either independently owned, part of a drug store chain, or part of a grocery or department store. Most community pharmacists were salaried, but a substantial number were self employed. One-quarter were in hospitals, and some were in health maintenance organizations (HMO's), clinics, and the Federal government.

Some pharmacists hold more than one job. They may work a standard week in their primary work setting and also work part-time elsewhere.

Although most rural areas and small towns have at least one pharmacy, most pharmacists practice in or near cities.

Training, Other Qualifications, and Advancement

A license to practice pharmacy is required in all States, the District of Columbia, and U.S. territories. To obtain a license, one must graduate from an accredited college of pharmacy (a few States allow graduation from certain foreign pharmacy programs), pass a State board



The job outlook for pharmacists is excellent.

examination, and have a specified amount of practical experience or serve an internship under a licensed pharmacist in a community or hospital pharmacy. In 1991, all States except California and Florida usually granted a license without reexamination to qualified pharmacists already licensed by another State. Many pharmacists are licensed to practice in more than one State. Most States require continuing education for license renewal.

At least 5 years of study beyond high school are required to graduate from programs accredited by the American Council on Pharmaceutical Education. Five years are needed for a Bachelor of Science (B.S.) or a Bachelor of Pharmacy (B.Pharm.) degree, the degrees received by most graduates. A Doctor of Pharmacy (Pharm.D.) degree normally requires at least 6 years, during which an intervening baccalaureate degree is not awarded. Those who already hold the bachelor's degree may enter Pharm.D. programs, but the combined period of study is usually longer than 6 years. Of the 74 colleges of pharmacy, 61 offer the bachelor's degree, 27 offer the bachelor's and the professional doctoral degree; 13 schools offer only the Pharm D. degree.

Requirements for admission to colleges of pharmacy vary. A few colleges admit students directly from high school. Some schools require the applicant to have taken the Pharmacy College Admissions Test (P-CAT). Most colleges of pharmacy, however, require 1 or 2 years of college-level prepharmacy education. Entry requirements vary among colleges of pharmacy, but usually include mathematics and basic sciences, such as chemistry, biology, and physics, as well as courses in the humanities and social sciences.

The bachelor's degree in pharmacy is generally acceptable for most positions in community pharmacies. However, many employers prefer the Pharm. D. degree. The Pharm.D. degree, which may be either an entry level or graduate one, is increasingly important for employment in hospitals. A master's or Ph.D. degree in pharmacy or a related field usually is required for research, and a Pharm.D., master's, or Ph.D. usually is necessary for administrative or faculty positions.

Fifty-six colleges of pharmacy offer the Master of Science degree and 52 offer the Ph.D. degree. Although a number of pharmacy graduates interested in further training pursue an advanced degree in pharmacy, there are other options. Some enter 1- or 2-year residency programs or fellowships. A pharmacy residency is an organized, directed, postgraduate training program in a defined area of pharmacy practice. A pharmacy fellowship is a directed, highly individualized program designed to prepare the participant to become an independent researcher.

Areas of graduate study include pharmaceutics and pharmaceutical chemistry (physical and chemical properties of drugs and dosage forms), pharmacology (effects of drugs on the body), pharmacognosy (drugs derived from plant or animal sources), and pharmacy administration. Courses in pharmacy administration are particularly helpful to pharmacists in developing the skills needed to manage a community or institutional pharmacy.

All colleges of pharmacy offer courses in pharmacy practice, designed to teach students the skills involved in compounding and dispensing prescriptions, and to strengthen their understanding of professional ethics and responsibilities. In many cases, professional training increasingly emphasizes direct patient care as well as consultative services to other health professionals.

Prospective pharmacists should be orderly and accurate and have the ability to gain the confidence of clients and patients.

In community pharmacies, pharmacists often begin as employees. After they gain experience and secure the necessary capital, they may become owners or part owners of pharmacies. A pharmacist in a chain drug store may be promoted to store manager or chief supervisory registered pharmacist, and later to a higher executive position within the company. Hospital pharmacists who have the necessary training and experience may advance to director of pharmacy services or to other administrative positions. Pharmacists in industry may advance in management, sales, research, quality control, advertising, production, packaging, and other areas.

Job Outlook

Employment of pharmacists is expected to grow about as fast as the average for all occupations through the year 2005, mainly due to the increased pharmaceutical needs of a larger and older population.

The increased number of middle-aged and older people will spur demand in all practice settings. Projected rapid growth in the elderly population is especially important because the number of prescriptions influences demand for pharmacists, and people over the age of 65 use twice as many prescription drugs, on the average, as younger people.

Other factors likely to increase demand for pharmacists through the year 2005 include the likelihood of scientific advances that will make more drug products available for the prevention, diagnosis, and treatment of diseases; new developments in administering medication; and well-informed consumers, increasingly sophisticated about health care and avid for detailed information about drugs and their consequences.

The number of pharmacists in hospitals is expected to grow as pharmacists perform more consultations and have more direct contact with patients. The increased severity of the typical hospital patient's illness, together with rapid strides in drug therapy, is likely to heighten demand for clinical pharmacists in hospitals, HMO's, and other health care settings.

The job outlook for pharmacists is expected to be excellent. If current supply-demand trends persist, shortages are likely in some communities and practice settings. As in other occupations, most job openings will result from the need to replace pharmacists who leave the profession.

Earnings

Median annual earnings of full-time, salaried pharmacists were $41,300 in 1990. Half earned between $35,200 and $46,700. The lowest 10 percent earned less than $25,500 and the top 10 percent more than $52,400.

Pharmacists employed full-time in private hospitals averaged $21.24 an hour, excluding premium pay for overtime and for work on weekends, holidays, and late shifts in January 1991. Among metropolitan areas studied separately, earnings ranged from $19.21 in Houston to $27.41 in San Francisco.

Pharmacists working in chain drug stores had an average base salary of $45,800 per year in 1990, while pharmacists working in independent drug stores averaged $41,900, health maintenance organizations (HMO's) averaged $47,000, and hospital pharmacists averaged $48,000, according to a survey by *Drug Topics* magazine published by Medical Economics Company, Inc. The same survey showed that pharmacists employed in the West earned higher

incomes than pharmacists in other regions of the country. Also, pharmacists employed by chain drug stores and hospitals receive more fringe benefits than those in independent drug stores. Pharmacists who were owners of pharmacies often earn considerably more than salaried pharmacists.

Related Occupations
Workers in other professions requiring similar educational training and who work with pharmaceutical compounds or perform related duties include scientists, pharmaceutical chemists, and pharmacologists.

Sources of Additional Information
Additional information on pharmacy as a career, preprofessional and professional requirements, programs offered by all the colleges of pharmacy, and student financial aid is available from:
☛ American Association of Colleges of Pharmacy, 1426 Prince St., Alexandria, VA 22314.

Information about hospital pharmacy can be obtained from:
☛ American Society of Hospital Pharmacists, 4630 Montgomery Ave., Bethesda, MD 20814.

Information on requirements for licensure in a particular State is available from the Board of Pharmacy of the State or from:
☛ National Association of Boards of Pharmacy, 1300 Higgins Rd., Suite 103, Park Ridge, IL 60068.

Information on specific college entrance requirements, curriculums, and financial aid is available from the dean of any college of pharmacy.

Physical Therapists

(D.O.T. 076.121-014)

Nature of the Work
Physical therapists improve the mobility, relieve the pain, and prevent or limit the permanent physical disabilities of patients suffering from injuries or disease. Their patients include accident victims and disabled individuals with such conditions as multiple sclerosis, cerebral palsy, nerve injuries, burns, amputations, head injuries, fractures, low back pain, arthritis, and heart disease.

Therapists evaluate a patient's medical history; test and measure each patient's strengths, weaknesses, range of motion, and ability to function; and develop written treatment plans. These plans describe the treatments to be provided, their purpose, and their anticipated outcomes. In some cases, plans are based on physicians' treatment orders. As treatment continues, they document progress, conduct periodic re-evaluations, and modify treatments, if necessary.

Treatment often includes exercise for patients who have been immobilized and lack flexibility. Using a technique known as passive exercise, therapists increase the patient's flexibility by stretching and manipulating stiff joints and unused muscles. Later in the treatment, they encourage patients to use their own muscles to further increase flexibility and range of motion before finally advancing to weights and other exercises to improve strength, balance, coordination, and endurance.

Physical therapists also use electricity, heat, or ultrasound to relieve pain or improve the condition of muscles or related tissues just as cold and water are used to reduce swelling and treat burns. They may also use traction or deep-tissue massage to relieve pain and restore function. Therapists also teach and motivate patients to use crutches, prostheses, and wheelchairs to perform day-to-day activities and show them therapies to do at home.

Physical therapists document evaluations, daily progress, medical team conferences, and reports to referring practitioners and insurance companies. Such documentation is used to track the patient's progress, identify areas requiring more or less attention, justify billings, and for legal purposes.

Some physical therapists treat a wide variety of problems; others specialize in such areas as pediatrics, geriatrics, orthopedics, sports physical therapy, neurology, and cardiopulmonary physical therapy.

Working Conditions
Physical therapists work in hospitals, clinics, and therapists' offices that have specially equipped facilities, or they treat patients in hospital rooms, homes, or schools.

Most physical therapists work a 40-hour week, which may include some evenings and weekends. The job can be physically demanding because therapists often have to stoop, kneel, crouch, lift, and stand for long periods of time. In addition, therapists move heavy equipment and lift patients or help them turn, stand, or walk. Work can be demanding and frustrating when patients do not improve.

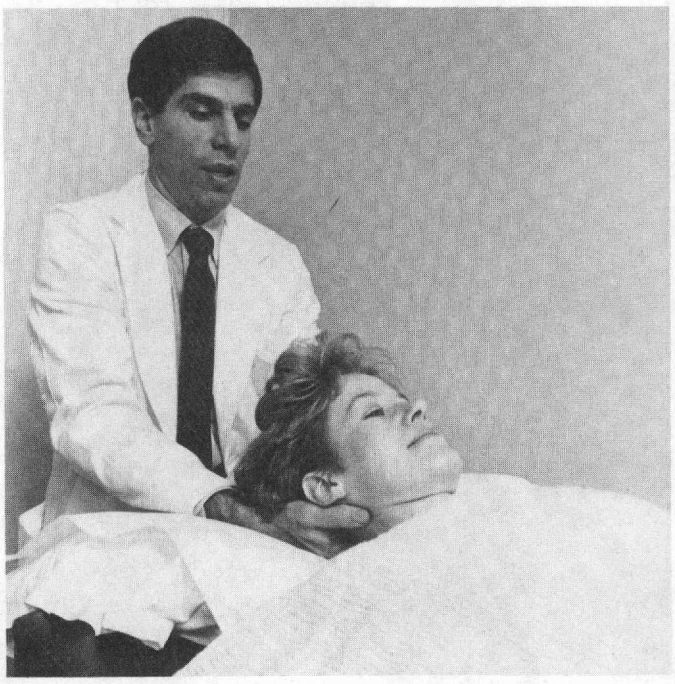
Employment
Physical therapists held about 88,000 jobs in 1990; about 1 in 4 worked part time.

Hospitals employed one-third and offices of other health practitioners, including those of physical therapists, one-quarter of all salaried physical therapists in 1990. Other jobs were in offices of physicians, home health agencies, nursing homes, and schools. Some physical therapists are in private practice, providing services to individual patients or contracting to provide services in hospitals, rehabilitation centers, nursing homes, home health agencies, adult daycare programs, and schools. These self-employed therapists may be in solo practice or be part of a consulting group. Some physical therapists teach in academic institutions and conduct research.

Training, Other Qualifications, and Advancement
All States require physical therapists to pass a licensure exam after graduating from an accredited physical therapy program.

Entry level education in physical therapy is available in 78 bachelor's degree and 44 master's degree programs. Physical therapy education, however, is undergoing a transition. Experts are coming to believe that a master's degree is better for teaching a growing body of knowledge and for preparing students for independent practice. As a result, it is likely that most bachelor's degree programs will eventually be extended to master's degree programs, although for the next few years most graduates will continue to be from bachelor's degree programs.

The bachelor's degree curriculum usually starts with introductory science courses such as chemistry, anatomy, physiology, and neuroanatomy and then introduces specialized courses such as biome-



Some physical therapists are in private practice.

chanics, human growth and development, manifestations of disease and trauma, evaluation and assessment techniques, research, and therapeutic procedures. Besides classroom and laboratory instruction, students receive supervised clinical experience, mostly in hospitals, but also in rehabilitation centers, private practices, and schools.

Competition for entry to physical therapy programs is keen, so interested students should attain superior grades in high school and college, especially in science courses. Courses useful when applying to physical therapy programs include anatomy, biology, chemistry, social science, mathematics, and physics. Individuals wanting to know more about physical therapy should do volunteer work in the physical therapy department of a hospital or clinic. In fact, many education programs require such experience for admission.

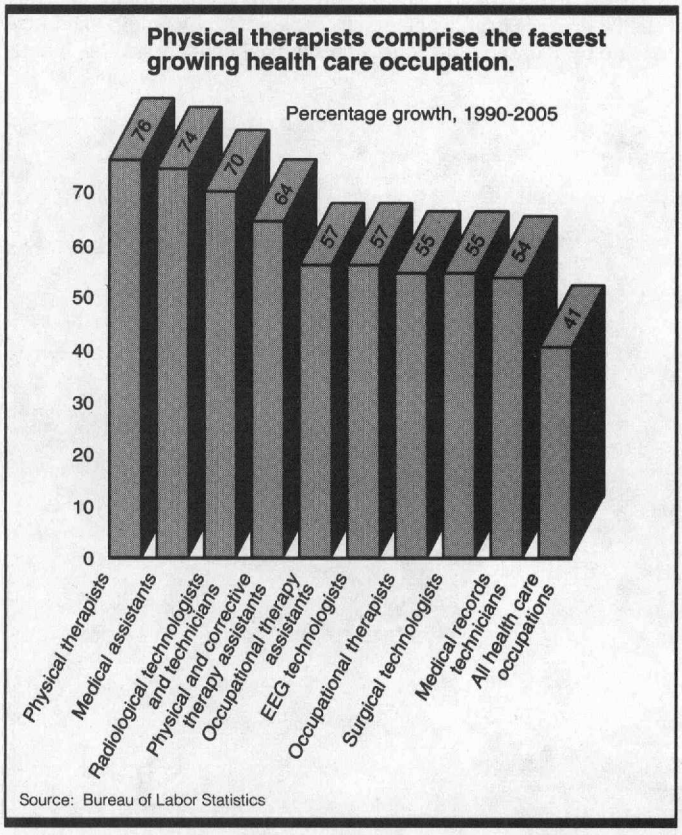
Physical therapists should enjoy working with people and be patient, tactful, persuasive, resourceful, and emotionally stable to help patients understand the treatments and adjust to their disabilities. Similar traits are also needed to deal with the patient's family. Physical therapists also need manual dexterity and physical stamina.

Physical therapists should expect to continue to develop professionally by participating in continuing education courses and workshops from time to time throughout their careers. A number of States require continuing education for maintaining licensure.

Job Outlook

Employment of physical therapists is expected to grow much faster than the average for all occupations through the year 2005. Growth will occur as new medical technologies save more people, who then need therapy; as new technologies permit more disabling conditions to be treated; and as the population grows and ages.

The rapidly growing elderly population is particularly vulnerable to chronic and debilitating conditions that will require more therapeutic services. At the same time, the baby-boom generation will enter the prime age for heart attack and strokes, increasing the demand for cardiac and physical rehabilitation. More young people will also need physical therapy as medical advances save the lives of a larger proportion of newborns with severe birth defects. Future medical developments will also permit a higher percentage of trauma victims to survive, creating additional demand for rehabilitative care.



Growth will also result from advances in medical technology which permit treatment of more disabling conditions. In the past, for example, the development of hip and knee replacements for those with arthritis gave rise to employment for physical therapists to improve flexibility and strengthen weak muscles.

The widespread interest in health promotion should also increase demand for physical therapy services. A growing number of employers are using physical therapists to evaluate worksites, develop exercise programs, and teach safe work habits to employees in the hope of reducing injuries.

There have been shortages of physical therapists in recent years. However, this situation should ease somewhat as the number of physical therapy education programs increases and more students graduate.

Earnings

Physical therapists employed full-time in private hospitals averaged $17.01 an hour, excluding premium pay for overtime and for weekends, holidays, and late shifts in January 1991. Among metropolitan areas studied separately, earnings ranged from $14.83 in St. Louis to $20.52 in San Francisco.

Related Occupations

Physical therapists treat and rehabilitate persons with physical or mental disabilities. They may use general or specialized exercises, massage, heat, water, electricity, and various therapeutic devices to help their patients gain independence. Others who work in the rehabilitation field include occupational therapists, speech pathologists and audiologists, orthotists, prosthetists, respiratory therapists, chiropractors, acupuncturists, and athletic trainers.

Sources of Additional Information

Additional information on a career as a physical therapist and a list of accredited educational programs in physical therapy are available from:

☛ American Physical Therapy Association, 1111 North Fairfax St., Alexandria, VA 22314.

Recreational Therapists

(D.O.T. 076.124-014)

Nature of the Work

Recreational therapists employ medically approved activities to treat or maintain the physical, mental, and emotional well-being of patients. Activities include sports, games, dance, drama, arts and crafts, music, and field trips. They help individuals build confidence, socialize effectively, and remediate the effects of illness or disability. Recreational therapists should not be confused with recreation workers who organize recreational activities primarily for enjoyment. (Recreation workers are discussed elsewhere in the *Handbook*.)

In clinical settings, such as hospitals and rehabilitation centers, recreational therapists treat and rehabilitate individuals with specific medical problems, usually in cooperation with physicians, nurses, psychologists, social workers, and physical and occupational therapists. In nursing homes, residential facilities, and community recreation departments, they use leisure activities—mostly group oriented—to improve general health and well-being, but may also treat medical problems. In these settings they may be called activity directors or therapeutic recreation specialists.

Recreational therapists assess patients, based on information from medical records, medical staff, family, and patients themselves. They then develop therapeutic activity programs consistent with patient needs and interests. For instance, a patient having trouble socializing may be helped to play games with others, or a patient with a right-side paralysis may be helped to use the left arm to throw a ball or swing a racket.

Community based recreational therapists work in park and recreation departments, special education programs, or programs for the elderly or disabled. In these programs therapists help patients develop

leisure activities and provide them with opportunities for exercise, mental stimulation, creativity, and fun.

Recreational therapists observe and record patients' participation, reactions, and progress. These records are used by the medical staff and others, to monitor progress, to justify changes or end treatment, and for billing.

Working Conditions

Recreational therapists often plan events and keep records in offices and provide services in special activity rooms. In community settings they might also work with clients in a recreation room, on a playing field, or in a swimming pool.

Therapists often lift and carry equipment as well as participate in activities. Recreational therapists generally work a 40-hour week, which may include some evenings, weekends, and holidays.

Employment

Recreational therapists held about 32,000 jobs in 1990. Two-fifths were in hospitals and one-third were in nursing homes. Others were in community mental health centers, adult day care programs, correctional facilities, residential facilities, community programs for people with disabilities, and substance abuse centers. Some therapists were self-employed, generally contracting with nursing homes or community agencies to develop and oversee programs.

Training, Other Qualifications, and Advancement

A bachelor's degree in therapeutic recreation (or in recreation with an option in therapeutic recreation) is the usual requirement for hospital and other clinical positions. An associate degree in recreational therapy; training in art, drama, or music therapy; or qualifying work experience may be sufficient for activity director positions in nursing homes.

A few States regulate this profession through licensure, certification, or regulation of titles. Applicants for licensure must pass a State exam after graduating from an accredited program. The National Council for Therapeutic Recreation Certification certifies therapeutic recreation specialists and therapeutic recreation assistants. Specialists must have a bachelor's degree and pass a certification exam; assistants need an associate degree. Some employers require individuals to be certified; others prefer it.

There are about 200 programs that prepare recreational therapists. As of 1990, 62 programs were accredited by the National Council on Accreditation. Most offer bachelor's degrees, although some offer associate or master's degrees.

In addition to therapeutic recreation courses in clinical practice and helping skills, program design, management, and professional issues, students study human anatomy, physiology, abnormal psychology, medical and psychiatric terminology, characteristics of illnesses and disabilities, and the concepts of mainstreaming and normalization. Additional courses cover professional ethics, assessment and referral procedures, and the use of adaptive and medical equipment. In addition, 360 hours of internship under the supervision of a certified therapeutic recreation specialist are required.

Recreational therapists should be comfortable working with disabled people and be patient, tactful, and persuasive. Ingenuity and imagination are needed in adapting activities to individual needs and good physical coordination is necessary when demonstrating or participating in recreational events.

Job Outlook

Employment of recreational therapists is expected to grow faster than the average for all occupations through the year 2005, because of anticipated expansion in long-term care, physical and psychiatric rehabilitation, and services for the disabled.

Hospitals will provide a large number of recreational therapy jobs through the year 2005. A growing number of these will be in hospital-based adult day care and out-patient programs, or in units offering short-term mental health and alcohol or drug abuse services. Long-term rehabilitation and psychiatric hospitals will provide additional jobs.

The rapidly growing number of older people is expected to spur job growth for activity directors in nursing homes, retirement communities, adult day care programs, and social service agencies. Continued growth is expected in community residential facilities as well as day care programs for people with disablities.

Job prospects are expected to be favorable for those with a strong clinical background.

Earnings

Average earnings for recreation therapists in the Federal Government were $30,559 a year in 1991.

In nursing homes, recreational therapists are often classified as activity directors. According to limited data from a survey conducted by the National Association of Activity Professionals, the average salary of activity directors in nursing homes was between $15,000 and $25,000 a year in 1990.

Related Occupations

Recreational therapists design activities to help people with disabilities lead more fulfilling and independent lives. Other workers who have similar jobs are orientation therapists for the blind, art therapists, drama therapists, dance therapists, music therapists, occupational therapists, and rehabilitation counselors.

Sources of Additional Information

For information on how to order materials describing careers and academic programs in recreational therapy, write to:

- American Therapeutic Recreation Association, C.O. Associated Management Systems, P.O. Box 15215, Hattiesburg, MS 39402-5215.
- National Therapeutic Recreation Society, a branch of the National Recreation and Park Association, 3101 Park Center Dr., Alexandria, VA 22302.

Certification information may be obtained from:

- National Council for Therapeutic Recreation Certification, 49 South Main St., Suite 001, Spring Valley, NY 10977.

Recreational therapists use sports and other activities to treat patients.

Registered Nurses

(D.O.T. 075.124-010 and -014, .127-014, -018, -022, -026, and -030, .137-010, .264-010 and -014, .371-010, .374-010, -014, -018, and -022)

Nature of the Work

Registered nurses (R.N.'s) care for the sick and injured and help people stay well. They are typically concerned with the "whole person," providing for the physical, mental, and emotional needs of their patients. They observe, assess, and record symptoms, reactions, and progress; assist physicians during treatments and examinations; administer medications; assist in convalescence and rehabilitation; instruct patients and their families in proper care; and help individuals and groups take steps to improve or maintain their health. While State laws govern the tasks R.N.'s may perform, it is usually the work setting which determines day-to-day job duties.

Hospital nurses form the largest group of nurses. Most are staff nurses, who provide bedside nursing care and carry out the medical regimen prescribed by physicians. They may also supervise licensed practical nurses and aides. Hospital nurses usually are assigned to one area such as surgery, maternity, pediatrics, emergency room, intensive care, or treatment of cancer patients or may rotate among departments.

Nursing home nurses manage nursing care for residents with conditions ranging from a fracture to Alzheimer's disease. Although they generally spend most of their time on administrative and supervisory tasks, R.N.'s also assess residents' medical condition, develop treatment plans, supervise licensed practical nurses and nursing aides, and perform difficult procedures such as starting intravenous fluids. They also work in specialty-care departments providing services such as long-term rehabilitaion for stroke and head injury patients.

Public health nurses work in government and private agencies and clinics, schools, retirement communities and other community settings. They instruct individuals and families and other groups in health education, disease prevention, nutrition, childcare, and home care of the sick or handicapped. They arrange for immunizations, blood pressure testing, and other health screening. These nurses also work with community leaders, teachers, parents, and physicians in community health education. Some work in home health care, providing periodic services prescribed by a physician and instructing patients and families.

Private duty nurses care for patients needing constant attention. They work directly for families on a contract basis or for a nursing or temporary help agency which assigns them to patients. They provide services in homes, hospitals, nursing homes, and rehabilitation centers.

Office nurses assist physicians in private practice, clinics, surgicenters, emergency medical centers, and health maintenance organizations (HMO's). They prepare patients for and assist with examinations, administer injections and medications, dress wounds and incisions, assist with minor surgery, and maintain records. Some also perform routine laboratory and office work.

Occupational health or industrial nurses provide nursing care at worksites, to employees, customers, and others with minor injuries and illnesses. They provide emergency care, prepare accident reports, and arrange for further care if necessary. They also offer health counseling, assist with health examinations and inoculations, and work on accident prevention programs.

Head nurses or nurse supervisors direct nursing activities. They plan work schedules and assign duties to nurses and aides, provide or arrange for training, and visit patients and observe nurses to insure that care is properly carried out. They may also insure that records are maintained and that equipment and supplies are ordered.

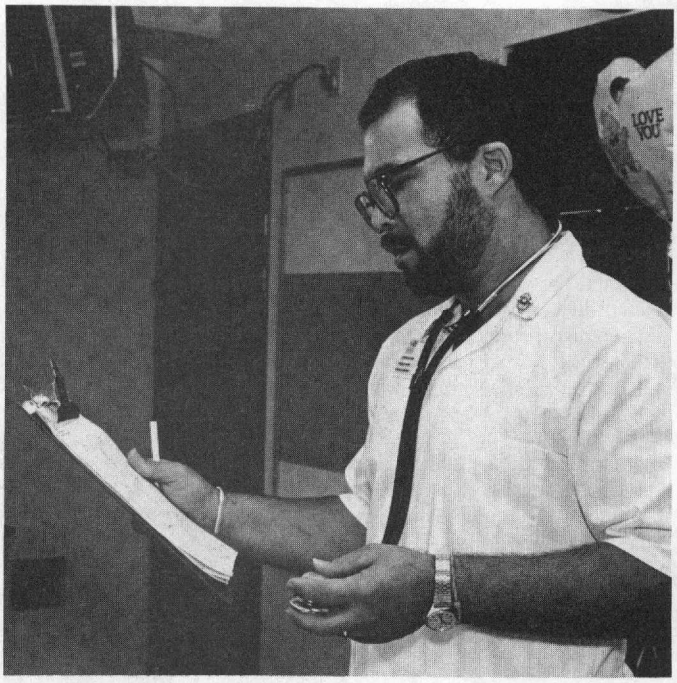
Working Conditions

Most nurses work in well-lighted, comfortable medical facilities. Public health nurses travel, in all types of weather, to patients' homes and to schools, community centers, and other sites. Nurses need physical stamina because they spend considerable time walking and standing. They need emotional stability to cope with human suffering, emergencies, and other stresses. Nurses work closely with but subordinate to physicians. Because patients in hospitals and nursing homes require care at all times, nurses in these institutions may work nights, weekends, and holidays. Office, occupational health, and public health nurses are more likely to work regular business hours.

Nursing has its hazards, especially in hospitals and clinics where nurses may care for individuals with infectious diseases such as hepatitis and AIDS. Nurses must observe rigid guidelines to guard against these and other dangers such as radiation, chemicals used for sterilization of instruments, and anesthesics. In addition, nurses face back injury when moving patients, shocks from electrical equipment, and hazards posed by compressed gases.

Employment

Registered nurses held about 1,727,000 jobs in 1990. About 2 out of 3 jobs were in hospitals. Others were in offices of physicians, nursing homes, temporary help agencies, schools, and government agencies. About one-fourth of all R.N.'s worked part time.



R.N.'s in hospitals may work nights, weekends, and holidays.

Training, Other Qualifications, and Advancement

To obtain a nursing license, all States require graduation from an accredited nursing school and passing a national licensing examination. Nurses may be licensed in more than one State, either by examination or endorsement of a license issued by another State. Licenses must be periodically renewed, and continuing education is a requirement for renewal in some States.

In 1989, there were 1,457 entry level R.N. programs. There are three major educational paths to nursing: Associate degree (A.D.N.), diploma, and bachelor of science degree in nursing (B.S.N.). A.D.N. programs, offered by community and junior colleges, take about 2 years. More than 60 percent of graduates in 1989 were from A.D.N. programs. B.S.N. programs, offered by colleges and universities, take 4 or 5 years. More than 30 percent of graduates in 1989 were from these programs. Diploma programs, given in hospitals, last 2 to 3 years. A small and declining number of graduates come from these programs. Generally, licensed graduates of any of the three program types qualify for entry level positions as staff nurses.

There have been attempts to raise the educational requirements for an R.N. license to a bachelor's degree and, possibly, create new job titles. However, such proposals have been around for years. These changes, should they occur, will be made State by State, through legislation or regulation. Changes in licensure requirements would not affect currently licensed R.N.'s, who would be "grandfathered" in, no matter what their educational preparation. However, individuals considering nursing should carefully weigh the pros and cons of enrolling in a B.S.N. program, since advancement opportunities are broader for those with a B.S.N. In fact, some career paths are open only to nurses with bachelor's or advanced degrees.

While A.D.N. or diploma preparation is enough for a nursing home nurse to advance to director of nursing, baccalaureate preparation is generally necessary for supervisory or administrative positions in hospitals and for positions in community nursing and home health care. Moreover, the B.S.N. is a prerequisite for admission to graduate nursing programs. So individuals considering research, consulting, teaching, and clinical specializations, which require graduate training, should take a B.S.N. program.

A growing number of A.D.N. and diploma-trained nurses are entering baccalaureate programs to prepare for a broader scope of nursing practice. Since many hospitals have tuition reimbursement programs, individuals with limited resources can get a 2-year degree, find a hospital position, and let their employer finance a B.S.N.

Nursing education include classroom instruction and supervised training in hospitals and other health facilities. Students take courses in anatomy, physiology, microbiology, chemistry, nutrition, psychology and other behavioral sciences, and nursing.

Supervised clinical experience is provided in hospital departments such as pediatrics, psychiatry, and surgery. A growing number of programs include courses in gerontological nursing and clinical practice in nursing homes. Some provide clinical training in public health departments and home health agencies.

Nurses should be caring and sympathetic. They must be able to accept responsibility and direct or supervise others; they must be able to follow orders precisely and have the judgment to determine when consultation is required.

Promotion to increasingly responsible jobs is possible through experience and good performance. Nurses can advance, in management, to assistant head nurse or head nurse. From there, advancement to assistant director, director, and vice president positions is possible. Increasingly, management level nursing positions require a graduate degree in nursing or health services administration. They require leadership and negotiation skills. Graduate programs preparing executive level nurses usually last 1 to 2 years.

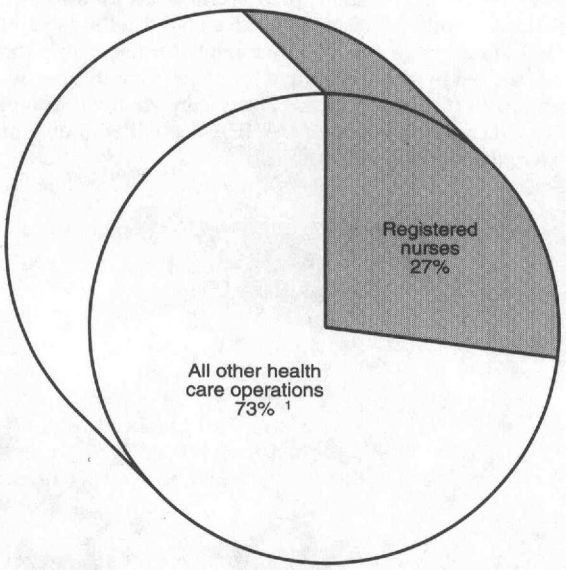
Within patient care, advancement may mean becoming a clinical nurse specialist, nurse practitioner, nurse clinician, nurse midwife, or nurse anesthetist. For these, 1 or 2 years of graduate education, leading to a certificate or master's degree, is required.

Some nurses move into the business side of health care. Their nursing expertise and experience on a health care team equip them to manage ambulatory, acute, home health, and chronic care services. Some are employed by health care corporations in health planning and development, marketing, and quality assurance.

Job Outlook

Job prospects in nursing should be very good for some time. Hospitals in many parts of the country are reporting shortages of R.N.'s, although shortages appear to be lessening. In addition, R.N. recruitment has long been a problem in rural areas, in some big city hospitals, and in specialty areas including intensive care, medical-surgical nursing, rehabilitation, geriatrics, and long-term care.

More than a quarter of the 2.9 million new jobs in health care occupations will be for registered nurses.



[1] Includes health diagnosing, assessment, technician, and service occupations.

Source: Bureau of Labor Statistics

How long the shortage of nurses will persist is difficult to say. Employers have been forced to compete for their share of RNs by increasing salaries and benefits. They also have reduced demand by hiring support staff to perform lesser skilled or non-nursing duties and taken other measures to make more efficient use of nurses. At the same time, reports of excellent job prospects and rising wages have caused enrollments in nursing programs to increase. Eventually, more new graduates and employers' efforts should create a balance between jobseekers and openings.

Employment of registered nurses is expected to grow much faster than the average for all occupations through the year 2005. Driving this growth will be technological advances in patient care, which permit a greater number of medical problems to be treated. Also, the number of older people, who are much more likely than younger people to need medical care, is projected to grow very rapidly.

Employment in hospitals, the largest sector, is expected to grow only as fast as average. While the intensity of nursing care is likely to increase, requiring more nurses per patient, the number of inpatients (those who remain overnight) is not likely to increase much. Also, patients are being released earlier and more procedures are being done on an outpatient basis, both in and outside hospitals. Most rapid growth is expected in hosptals' outpatient facilities.

Employment in physicians' offices and clinics, including HMO's, ambulatory surgicenters, and emergency medical centers is expected to grow very rapidly as health care in general expands. In addition, an increasing proportion of sophisticated procedures, which once were performed only in hospitals, are being performed here, thanks largely to advances in technology.

Home health care is also becoming an increasingly important source of employment. This is in response to the prevalence of functional disabilities among older persons, consumer preference for care in the home, and technological advances which make it possible to bring increasingly complex treatments into the home.

Employment in nursing homes is expected to grow very fast due to the projected sharp increase in the number of people in their eighties and nineties, many of whom will require long-term care. In addition, the financial pressure on hospitals to release patients as soon as possible should produce more nursing home admissions for posthospital care. People recovering from surgery, stroke, or other major episodes will stay in nursing homes for a relatively brief time but will continue to require the services of an R.N. to provide such intensive services as intravenous therapy and respirator support. Growth in units to provide specialized long-term rehabilitation for stroke and head injury patients or to treat alzheimer's victims will also increase employment.

Earnings

Staff nurses employed full-time in private hospitals averaged $16.20 an hour, excluding premium pay for overtime and for work on weekends, holidays, and late shifts in January 1991. Among 19 metropolitan areas studied separately, earnings ranged from $15.17 in Dallas to $21.82 in San Francisco. Part-time staff nurses averaged $17.14 an hour. Full-time head nurses averaged $19.83 an hour, clinical specialists, $21.02, nurse practitioners, 21.63, and nurse anesthetists, $29.19.

R.N. staff nurses in nursing homes earned $12.96 an hour in 1991, according to a survey by the Hospital Compensation Service, Hawthorne, NJ.

Many employers are offering flexible work schedules, child care, educational benefits, bonuses, and other incentives.

Related Occupations

Workers in other occupations with responsibilities and duties related to those of registered nurses include occupational therapists, paramedics, physical therapists, physician assistants, and respiratory therapists.

Sources of Additional Information

The National League for Nursing (NLN) publishes a variety of nursing and nursing education materials, including a list of nursing schools and information on student financial aid. For a complete list

of NLN publications, write for a career information brochure. Send your request to:

☛ Communications Department, National League for Nursing, 350 Hudson St., New York, NY 10014.

For a brochure entitled *Is Nursing for You?*, send $1 to:

☛ National Student Nurses' Association, 555 West 57th St., Suite 1325, New York, NY 10019.

Information on career opportunities as a registered nurse is available from:

☛ American Nurses' Association, 2420 Pershing Rd., Kansas City, MO 64108.

Information about employment opportunities in Veterans Administration medical centers is available from local Veterans Administration medical centers and also from:

☛ Title 38 Employment Division (054D), Veterans Administration, 810 Vermont Ave. NW., Washington, DC 20420.

For information on nursing careers in hospitals, contact:

☛ American Hospital Association, Division of Nursing, 840 North Lake Shore Dr., Chicago, IL 60611.

For a copy of *Health Careers in Long-Term Care*, write:

☛ American Health Care Association, 1201 L St. NW., Washington, DC 20005-4014.

Respiratory Therapists

(D.O.T. 079.361)

Nature of the Work

A person may live without water for a few days and without food for a few weeks. But without oxygen, a person will suffer serious brain damage within a few minutes and death after 9 minutes or more. Respiratory therapists, also known as respiratory care practitioners, evaluate, treat, and care for patients with breathing disorders.

In evaluating patients, therapists test the capacity of the lungs and analyze the oxygen and carbon dioxide concentration and potential of hydrogen (pH), a measure of the acidity or alkalinity level of the blood. To measure lung capacity, therapists have patients breathe into an instrument that measures the volume and flow of air during inhalation and exhalation. By comparing the reading with the norm for the patient's age, height, weight, and sex, respiratory therapists can determine whether lung deficiencies exist. To analyze oxygen, carbon dioxide, and pH levels, therapists need an arterial blood sample, which they generally draw themselves. Respiratory therapists place the sample in a blood gas analyzer, and relay the results to the physician.

Respiratory therapists treat all sorts of patients, be they premature infants whose lungs are not fully developed or elderly people whose lungs are diseased. Their treatment may give temporary relief to patients with chronic asthma or emphysema to emergency care for heart failure, stroke, drowning, or shock victims. For treatments, respiratory therapists most commonly use oxygen or oxygen mixtures, chest physiotherapy, and aerosol medications. Therapists may place an oxygen mask or nasal cannula on a patient and set the oxygen flow at the level prescribed by the physician to increase a patient's concentration of oxygen. Therapists also connect patients who cannot breathe on their own to ventilators which deliver pressurized air into the lungs. They insert a tube into a patient's trachea, or windpipe; connect the tube to the ventilator; and set the rate, volume, and oxygen concentration of the air entering the patient's lungs. Therapists regularly check on patients and equipment. If the patient appears to be having difficulty or if the oxygen, carbon dioxide, or pH level of the blood is abnormal, they change the ventilator setting according the doctor's order. In addition, therapists continually check equipment to ensure that there are no mechanical problems. In homecare, therapists teach patients and their families how to use the mechanical ventilators and other life support systems. Respiratory therapists visit several times a month to inspect and clean the equipment and ensure its proper use. Therapists also serve as troubleshooters, making emergency visits if equipment problems arise.

Respiratory therapists perform chest physiotherapy on patients who need help with removing mucus from their lungs to make it easier for them to breathe. For example, during surgery, anesthesia depresses respiration, so this treatment may be prescribed to help get the patient's lungs back to normal and prevent congestion. Chest physiotherapy also is used on patients suffering from lung diseases, such as cystic fibrosis, that cause increased amounts of sticky mucus to collect in the lungs. Therapists place patients in positions to help drain mucus from the lungs. Then they thump and vibrate patients' rib cages and instruct patients to cough.

Respiratory therapists also administer aerosols_generally liquid medications suspended in a gas that forms a mist which is inhaled. Sometimes they teach patients how to administer aerosols themselves. They always must instruct patients how to inhale the aerosol properly to assure its effectiveness.

Other duties include keeping records of the materials used and charges to patients. Some therapists teach or supervise other respiratory therapy personnel too.

Working Conditions

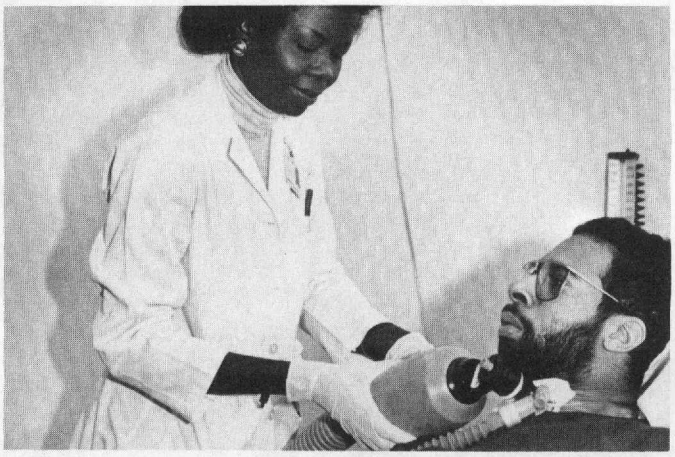
Respiratory therapists generally work a 40-hour week. Because hospitals operate around the clock, therapists may work evenings, nights, or weekends. Respiratory therapists spend long periods standing and walking between patients' rooms. In an emergency, they work under a great deal of stress. Gases used by respiratory therapists are potentially hazardous because they are used and stored under pressure. However, adherence to safety precautions and regular maintenance and testing of equipment minimize the risk of injury. As with many health occupations, respiratory therapists who perform blood gas analysis run a risk of catching an infectious disease, such as AIDS, from accidental pricking of a needle. Careful adherence to proper procedures minimizes the risk.

Employment

Respiratory therapists held about 60,000 jobs in 1990. About 9 out of 10 jobs were located in hospitals in departments of respiratory care, anesthesiology, or pulmonary medicine. Durable medical equipment rental companies, home health agencies, and nursing homes accounted for most of the remaining jobs.

Training, Other Qualifications, and Advancement

Formal training is necessary for entry to this field. Training is offered at the postsecondary level by hospitals, medical schools, colleges and universities, trade schools, vocational-technical institutes, and the Armed Forces. Some programs prepare graduates for jobs as respiratory therapists; other, shorter programs lead to jobs as respiratory therapy technicians. In 1990, 271 programs for respiratory therapists were accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. Another 170 programs offered CAHEA-accredited preparation for respiratory therapy technicians.



Respiratory therapists regularly check on patients with lung problems.

Formal training programs vary in length and in the credential or degree awarded. Most of the CAHEA-accredited therapist programs last 2 years and lead to an associate degree. Some, however, are 4-year programs that lead to a bachelor's degree. Technician programs last about 1 year, and graduates are awarded certificates. Areas of study for respiratory therapist programs include human anatomy and physiology, chemistry, physics, microbiology, and mathematics. Technical courses deal with procedures, equipment, and clinical tests.

People who want to enter this field should be sensitive to patients' physical and psychological needs. Respiratory care workers must pay attention to detail, follow instructions, and work as part of a team. Operating complicated respiratory therapy equipment requires mechanical ability and manual dexterity.

High school students interested in a career in respiratory care are encouraged to take courses in health, biology, mathematics, chemistry, and physics. Respiratory care involves basic mathematical problem-solving—an ability to use percentages, fractions, logarithms, exponents, and algebraic equations. An understanding of chemical and physical principles such as general gas laws, the states of matter, chemical reactions at the atomic level, and the periodic table is also important. Computing medication dosages and calculating gas concentrations are just two examples of the need for knowledge of science and mathematics.

Licensure, certification, and registration are methods used to assure the skill and competence of health personnel. Licensure refers to the process by which a government agency authorizes individuals to engage in a given occupation or use a particular job title. Thirty-three States license respiratory care personnel.

The National Board for Respiratory Care offers voluntary certification and registration. Two credentials are awarded to respiratory care practitioners who satisfy the requirements: Certified Respiratory Therapy Technician (CRTT) and Registered Respiratory Therapist (RRT). A distinctive feature of the credentialling process in respiratory care is that everyone, therapists and technicians, starts out by becoming a CRTT. Graduates of 2- and 4-year programs in respiratory therapy, as well as graduates of 1-year technician programs, begin by taking the CRTT examination. Regardless of the type of program, it must have CAHEA accreditation. A separate examination, open only to CRTT's who meet the education and experience requirements, leads to the award of the RRT.

Most employers require that applicants for entry level or generalist positions hold the CRTT or be CRTT-eligible, that is, eligible to take the certification examination. Positions in intensive care specialties, and those that involve supervisory duties, usually require the RRT (or RRT eligibility).

Respiratory therapists advance in clinical practice by moving from care of "general" to "critical" patients, whom have significant problems in other organ systems such as the heart or kidneys. Respiratory therapists may also advance to supervisory or managerial positions. With additional education or experience, promotion to the position of director of the respiratory therapy department is a possibility. Respiratory therapists in home care and equipment rental firms may become branch managers.

Many therapists have found careers as instructors in respiratory therapy education programs and in hospitals. With additional academic preparation, they may advance to program professors or directors. Others leave the occupation to work as sales representatives or as equipment designers for equipment manufacturers.

Job Outlook

Employment of respiratory therapists is expected to increase much faster than the average for all occupations through the year 2005 because of substantial growth of the middle-aged and elderly population, a development that is virtually certain to heighten the incidence of cardiopulmonary disease.

The elderly are the most common sufferers from respiratory ailments and cardiopulmonary diseases such as pneumonia, chronic bronchitis, emphysema, and heart disease. As their numbers increase, the need for respiratory therapists to care for them will increase as well. In addition, advances in treating victims of heart attacks, accident victims, and premature infants (many of whom may be dependent on a ventilator during part of their treatment) will require the services of respiratory care practitioners. Projected rapid growth in the number of patients with AIDS will also boost demand for respiratory care since lung disease so often accompanies AIDS.

Developments within the profession will affect the kinds of skills in greatest demand. Neonatal care and cardiopulmonary care have already emerged as distinct specialties, and opportunities appear to be highly favorable for respiratory therapists with the requisite skills.

Very rapid growth is expected in home health agencies, equipment rental companies, and firms that provide respiratory care on a contract basis. Technological advances and changes in third-party (Medicare and insurance companies) payments should allow more respiratory care to be provided at home. Because of reimbursement policies, especially strong growth is expected in durable medical equipment firms which rent respiratory equipment. However, it is important to bear in mind that the very rapidly growing field of home health care accounts for a relatively small share of respiratory therapy jobs. As in other occupations, most job openings will result from the need to replace workers who transfer to other jobs or stop working altogether.

Earnings

Respiratory therapists who work full-time in private hospitals averaged $12.60 an hour, excluding premium pay for overtime and for work on weekends, holidays, and late shifts in January 1991. Average hourly earnings ranged from $11.48 in Fort Worth-Arlington to $18.02 in San Francisco. Therapists who worked part-time averaged $13.01.

Related Occupations

Respiratory therapists, under the supervision of a physician, administer respiratory care and life support to patients with heart and lung difficulties. Other workers who care for, treat, or train people to improve their physical condition include dialysis technicians, registered nurses, occupational therapists, physical therapists, and radiation therapy technologists.

Sources of Additional Information

Information concerning a career in respiratory care is available from:

☛ American Association for Respiratory Care, 11030 Ables Ln., Dallas, TX 75229.

Information on gaining credentials as a respiratory therapy practitioner can be obtained from:

☛ The National Board for Respiratory Care, Inc., 8310 Nieman Rd., Lenexa, KS 66214.

For the current list of CAHEA-accredited educational programs for respiratory therapy occupations, write:

☛ Joint Review Committee for Respiratory Therapy Education, 1701 W. Euless Blvd., Suite 200, Euless, TX 76040.

Speech-Language Pathologists and Audiologists

(D.O.T. 076.101, .104, and .107)

Nature of the Work

Speech-language pathologists assess and treat persons with speech, language, voice, and fluency disorders, while audiologists assess and treat those with hearing and related disorders.

Speech-language pathologists work with people who can not make speech sounds, or can not make them clearly; those with speech rhythm and fluency problems, such as stuttering; people with speech quality problems, such as inappropriate pitch or harsh voice; and those with problems understanding and producing language. They may also work with people who have oral motor problems that cause eating and swallowing difficulties. Speech and language problems may result from causes such as hearing loss, brain injury or deterioration, cerebral palsy, stroke, cleft palate, voice pathology, mental retar-

dation, or emotional problems. Speech-language pathologists use special instruments, as well as written and oral tests, to determine the nature and extent of impairment, and to record and analyze speech irregularities. For individuals with little or no speech, speech-language pathologists select alternative communication systems, including automated devices and sign language, and teach their use. They teach other patients how to make sounds, improve their voices, or increase their language skills.

Audiologists work with people who have hearing and related problems. They use audiometers and other testing devices to measure the loudness at which a person begins to hear sounds, their ability to distinguish between sounds, and other tests of the nature and extent of their hearing loss. Audiologists may coordinate these results with medical, educational, and psychological information, make a diagnosis, and determine a course of treatment. Treatment may include examining and cleaning the ear canal, the fitting of a hearing aid, auditory training, and instruction in speech or lip reading. They may also recommend use of amplifiers and alerting devices. Audiologists also test noise levels in workplaces and conduct hearing protection programs.

Most speech-language pathologists and audiologists provide direct clinical services to individuals with communication disorders. In speech, language, and hearing clinics, they may independently develop and carry out a treatment program. In medical facilities, they may work with physicians, social workers, psychologists, and other therapists to develop and execute a treatment plan. Speech-language pathology and audiology personnel in schools also develop individual or group programs, counsel parents, and assist teachers with classroom activities, to meet the needs of children with speech, language, or hearing disorders.

Speech-language pathologists and audiologists keep records on the initial evaluation, progress, and discharge of clients. This helps pinpoint problems, tracks client progress, and justifies the cost of treatment when applying for reimbursement. They counsel individuals and their families about communication disorders and how to cope with the stress and misunderstanding that often accompany them. They also work with family members to recognize and change behavior patterns that impede communication and treatment, and show them communication-enhancing techniques to use at home.

Some speech-language pathologists and audiologists conduct research on how people speak and hear. Others design and develop equipment or techniques for diagnosing and treating problems.

Working Conditions

Speech-language pathologists and audiologists spend most of their time at a desk or table in clean comfortable surroundings. The job is not physically demanding, but does require attention to detail and intense concentration. The emotional needs of clients and their families may be demanding and there may be frustration when clients do not improve. Speech-language pathologists and audiologists who work on a contract basis may spend a substantial amount of time traveling between facilities.

Employment

Speech-language pathologists and audiologists held about 68,000 jobs in 1990. About one-half provided services in preschools, elementary and secondary schools, or colleges and universities. More than 10 percent were in hospitals. Others were in offices of physicians; offices of speech-language pathologists and audiologists; speech, language, and hearing centers; home health care agencies; and other facilities. Some were in private practice, working either as solo practitioners or in a group practice.

Some experienced speech-language pathologists or audiologists contract to provide services in schools, hospitals, or nursing homes or work as consultants to industry.

Training, Other Qualifications, and Advancement

A master's degree in speech-language pathology or audiology is the standard credential in this field. Of the 40 States that license audiologists, and the 39 States that license speech-language pathologists, all require a master's degree or equivalent; 275 to 300 hours of supervised clinical experience; a passing score on a national examination;

More than one-half of speech-language pathologists and audiologists work in schools.

and 9 months of post-graduate professional experience. For licensure renewal, 20 states have continuing education requirements. Medicaid, Medicare, and private insurers generally require a license to qualify for reimbursement.

In schools, people with bachelor's degrees in speech-language pathology may work with children who have communication problems. They may have to be certified by the State educational agency, and may be classified as special education teachers rather than speech-language pathologists or audiologists. Recent Federal legislation requires speech-language pathologists in school systems to have a minimum of a master's degree or equivalent. All States require audiologists to hold a master's degree or equivalent.

About 230 colleges and universities offered master's programs in speech-language pathology and audiology in 1991. Courses cover anatomy and physiology of the areas involved in speech, language, and hearing; the development of normal speech, language, and hearing and the nature of disorders; acoustics; and psychological aspects of communication. Graduate students also learn to evaluate and treat speech, language, and hearing disorders and receive supervised clinical training in communication disorders.

Those with a master's degree can acquire the Certificate of Clinical Competence (CCC) offered by the American Speech-Language-Hearing Association. To earn the CCC, a person must have a master's degree, have 300 hours of supervised clinical experience, complete a 9-month post-graduate internship, and pass a national written examination.

Speech-language pathologists and audiologists should be able to effectively communicate test results, diagnoses, and proposed treatment in a manner easily understood by their clients. They also need to be able to approach problems objectively and provide support to clients and their families. Patience and compassion are important since a client's progress may be slow.

With experience, some salaried speech-language pathologists and audiologists enter private practice; others become directors or administrators of services in schools, hospitals, health departments, and clinics. Some become researchers.

Job Outlook

Employment of speech-language pathologists and audiologists is expected to increase faster than the average for all occupations through the year 2005. Their employment in the health care industry is projected to grow faster than the average for all occupations, while employment in education is expected to grow only as fast as the average.

Employment in the health care industry will increase as a result of several factors. Because hearing loss is strongly associated with older age, rapid growth in the population age 75 and over will cause the number of hearing-impaired persons to increase rapidly. In addition, baby boomers are now entering middle age, when the possibility of neurological disorders and their associated speech, language and

hearing impairments, increases. Medical advances are also improving the survival rate of trauma victims, who then need treatment.

The number of speech-language pathologists and audiologists in private practice, though small, is likely to rise sharply by the year 2005. Encouraging this growth is the increasing use of contract services by hospitals, schools, and nursing homes.

Employment in schools will increase as elementary and secondary school enrollments grow. Recent Federal legislation guaranteeing special education and related services to all eligible children with disabilities, while originally designed for school-age children, was recently extended to include children from 3 to 5 years of age. This legislation will also increase employment in day care centers, rehabilitation centers, and hospitals.

Earnings

According to a 1990 survey by the American Speech-Language-Hearing Association, the median annual salary for speech-language pathologists with 1 to 3 years experience was about $25,000; for audiologists, it was about $26,000. Speech-language pathologists with 16 years or more experience earned a median annual salary of about $38,000, while experienced audiologists earned about $42,000. Salaries also vary according to geographic location.

Speech-language pathologists and audiologists in hospitals and medical schools earned a median annual salary of about $30,500, according to a 1990 survey conducted by the University of Texas Medical Branch.

Related Occupations

Speech-language pathologists and audiologists specialize in the prevention, diagnosis, and treatment of speech, language, and hearing problems. Workers in other rehabilitation occupations include occupational therapists, physical therapists, recreational therapists, and rehabilitation counselors.

Sources of Additional Information

State departments of education can supply information on certification requirements for those who wish to work in public schools.

General information on speech-language pathology and audiology is available from:

☛ American Speech-Language-Hearing Association, 10801 Rockville Pike, Rockville, MD 20852.

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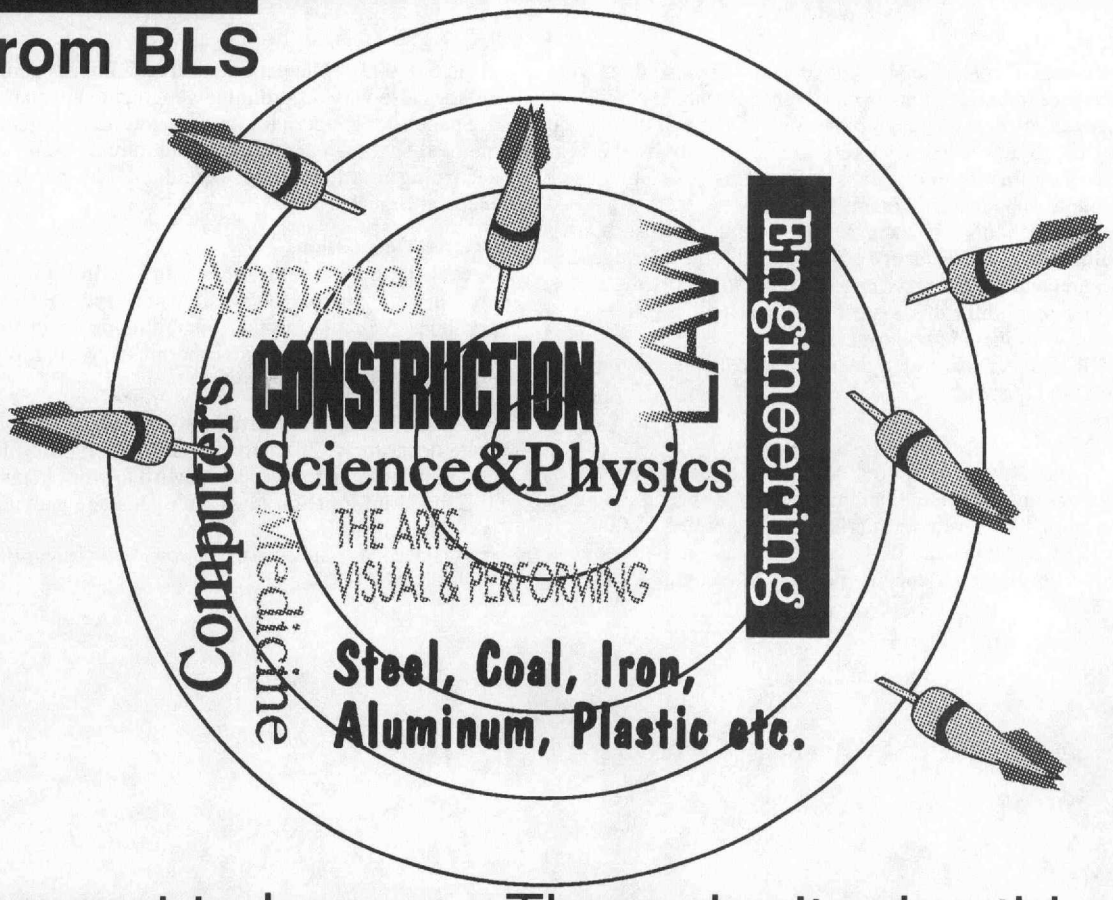

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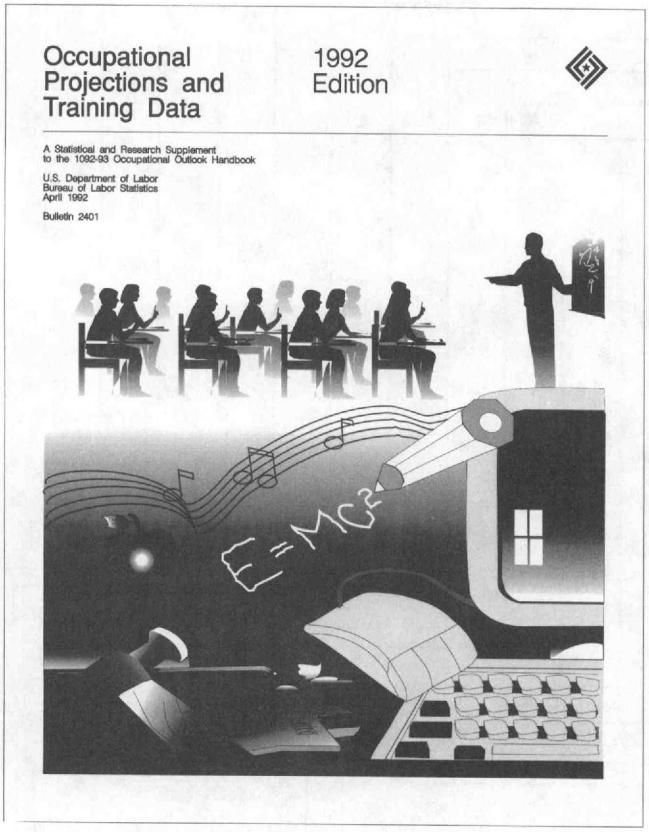
Career Guide to Industries, BLS Bulletin 2403, was produced by the same staff that prepares the *Occupational Outlook Handbook*—the Federal Goverment's premier career guidance publication. This new book is a must for guidance counselors, individuals planning their careers, job seekers, and others who want the latest word on career information from an industry perspective.

Note: At press time, the price for this publication was not available. Contact any of the Bureau of Labor Statistics Regional Offices listed on the inside front cover, or the Division of Occupational Outlook, Bureau of Labor Statistics, Washington, DC 20212.

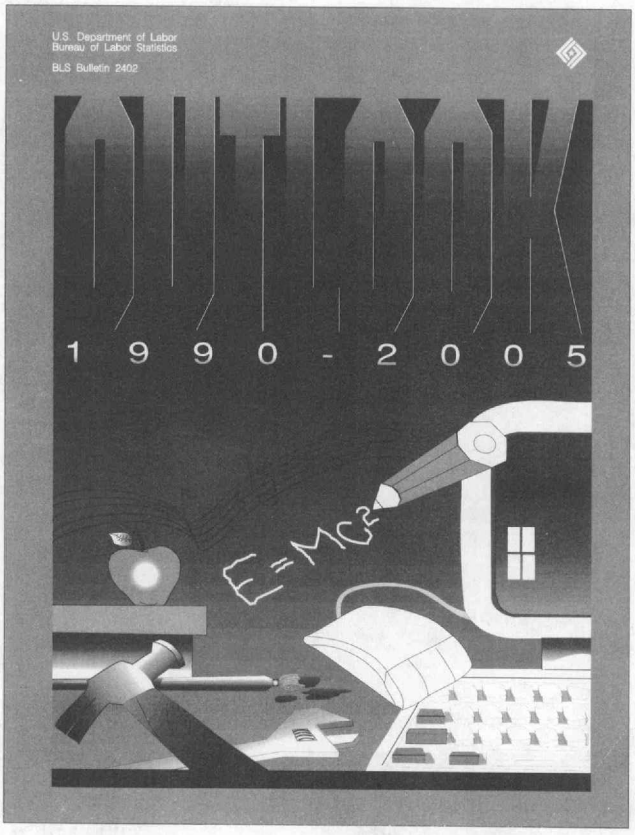
Related Publications



BLS Bulletin 2401

Occupational Projections and Training Data, 1992 Edition

This supplement to the *Occupational Outlook Handbook* provides the statistical and technical data supporting the information presented in the *Handbook*. Education and training planners, career counselors, and jobseekers can find valuable information that ranks occupations by employment growth, earnings, susceptibility to unemployment, separation rates, and part-time work.



BLS Bulletin 2402

Outlook 1990-2005

Every 2 years, the Bureau of Labor Statistics produces detailed projections of the U.S. economy and labor force. This bulletin presents the Bureau's latest analyses of economic and industrial growth, the labor force, and trends in occupational employment into the 21st century. An overview article focuses on important issues raised by these projections.

Note:
At press time, prices for these publications were not available. For prices and ordering information, contact any of the Bureau of Labor Statistics Regional Offices listed on the inside of the front cover, or the Division of Occupational Outlook, Bureau of Labor Statistics, Washington, DC 20212.

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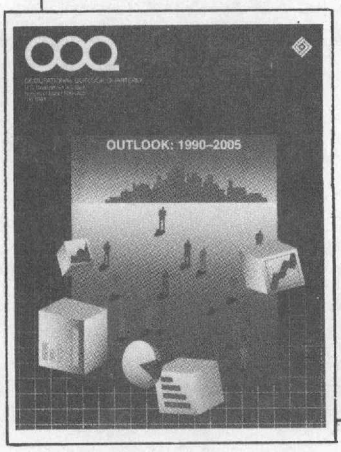

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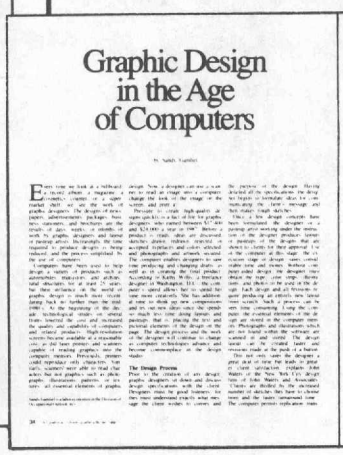

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