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Aging and Psychiatric Diseases of Late Life

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Terms and Definitions

Aging when applied to living organisms is used to identify changes that take place gradually and end with death. Such changes may be a decline in body efficiency, a change in structure, and a stoppage or reversal of growth. *Primary aging* refers to biological processes that are apparently inborn and inevitable detrimental changes which are time related but influenced by stress, trauma, and environment. All people, animals, plants, as well as nonliving matter become older, and all undergo identifiable changes with the passage of time. Primary aging processes are not identical in all people, and those that take place do not progress at the same rate. *Secondary aging* refers to disabilities resulting from trauma and disease. The terms *growth* and *development* usually represent biological processes which are the opposite of aging. Living things must, of course, grow older; hence both growth and aging can take place in the same living organisms at the same time.

The designation *aged* is often used arbitrarily to denote or define persons who have achieved a certain chronological age within a given environment. Utilizing chronological age to place a person in a group is a great convenience for society, but the age of an individual does not reflect the individual's abilities. Furthermore, a person is considered old or aged at forty

in so-called underdeveloped nations, while in an industrialized or advanced society, a person can live many more years before being considered aged.

Some scientists and scholars believe that the term *aging* is misleading and prefer to use the term *senescence* to stand for the deterioration that accompanies the passage of time. This term is, therefore, essentially the same as primary aging. *Senility,* or senile changes, refers to what has been previously described as *secondary aging.* The science of aging, called *gerontology,* includes all of its aspects—biological, psychological, and sociological. *Geriatrics* is a more restricted term applied to the biomedical aspects of gerontology.

Expectation of life, that is, the average number of years of life remaining to persons at a given age, is an estimate based upon the assumption that the death rate in a single year or over some period of time will remain completely unchanged in the future. Obviously any event that influences future death rates alters the accuracy of the estimate called "life expectancy." Life expectancy at birth in the United States between 1900 and 1902 was as follows: white males, 48.2 years; white females, 52.2 years. In 1968, the life expectancy of American white males was 67.5 years, and of white females, 74.9 years. Nonwhite males had increased to 60.1 years, and non white females to 67.5 years.

Negroes of all ages compose approximately 11 percent of the population of the United States. However, because of the lower life expectancy, older Negroes are underrepresented in both the total population and in the Negro population.

In 1970, 9.9 percent of the United States' citizens were 65 years of age and over. This means that every tenth American is considered to be an older American. In 1870, only 2.9 percent were 65 years and over. This shift in the age distribution of our population is particularly significant to physicians and psychiatrists. However, of equal if not greater importance to our society and to psychiatry is the growing predominance of women. This is discussed further in the section, The Older Population.

Longevity, the state of living considerably beyond the normal expectation, is said to occur in identifiable groups of humans. A group of people that have received particular public attention are the inhabitants of Abkhasia in southern Russia. News media reports based upon articles by the Soviet Russian scientist Basilevich, the American anthropologist Sula Benet, and Alexander Leaf of Harvard University indicate that a significant number of elderly individuals reach the age of 100 years or more. Although they show age changes affecting the hair and skin, they reportedly have keen eyesight and most have their own teeth. The latter is particularly remarkable when one considers the loss of teeth in elderly Americans. The Abkhasians are

reported to be extremely active people who are slender and agile and maintain physical cleanliness and neat clothing. They rarely marry before the age of 30, and virginity for the bride is an absolute requirement. Yet sex is considered good and pleasurable. Retirement is unknown and the status of the aged in the community increases with age. Abkhasians themselves attribute their longevity to their work patterns, sex, and dietary habits.

Although many individuals express the hope and belief that it is possible to extend the life span, the hope of delaying aging focuses, for most individuals, on the continuation of sexual vigor and reproductive capacity. Perhaps the best known attempt to find prolonged youth is the medieval search for the Fountain of Youth. It was taken seriously and was based upon a science-fictionlike account written in the second century. Ponce de Leon's expedition in 1512 and his exploration of Florida were actually organized and financed to specifically search for the Fountain of Youth. Rejuvenation efforts have existed for centuries in the Near and Far East. Efforts to maintain and restore youth were primarily rooted in the practice of gerocomy. *Gerocomy* is the belief and practice that men absorb virtue and youth from women, particularly young women. King David in the Old Testament believed it and practiced it accordingly. In more recent times, Mahatma Gandhi practiced a form by sleeping with his niece. According to Comfort this concept has some support from modern experimental studies. Aged male rats respond favorably when a young female rat is placed among them. Her presence and

activities greatly improve their condition and prolong their survival.

Theories of Aging

There is no unified theory of aging because of the complexity of the interaction of biological, psychological, and sociological processes. A discussion of social theories can be found in Vol. 6, Chap. 42 of this *Handbook.* A brief and oversimplified review of the biological and psychological theories of aging follows.

Biological Theories

There are three distinct biological components of the bodies of humans and higher animals. Two of the components are cellular and one is noncellular. One of the cellular components is made up of cells that are capable of reproducing themselves throughout the animal or person's life span. Skin and white blood cells are examples of such cells that have the capacity to reproduce. The second component is made up of those cells that cannot reproduce and cannot be replaced. Such cells are the neurons of the brain and of the nervous system. The third biological component is noncellular; that is, it is the material that occupies the space between the cells. It appears that aging is different in each of these components. Consequently, many so-called aging processes have been described and theories advanced. Some of these aging changes take place in at least two of the components, but at this time none is applicable to all three components of the body. One early biological explanation of aging rests on the assumption

that a living organism contains a fixed supply of energy not unlike that contained within a coiled watch spring. When the spring of the watch is unwound or the energy consumed, life ends (exhaustion theory). The accumulation of harmful matter is another simple theory based upon the increasing failure of the organism to dispose of waste products.

Deliberate biological programming is another explanation of aging and death. The vital functions and the duration of the life of a cell are determined by an intracellular memory stored in a DNA (dioxyribonucleic acid) controller gene. Hayflick contends that dividing cells have a finite capacity for doing so. He has demonstrated that human embryonic fibroblasts divide approximately 50 times and then die. Cells created at about age 20 years approximately double 30 times, and cells acquired at a later age show a progressive decline in their doubling capacities.

Another theory that has received considerable attention in the laboratory relates to the reduction of life span of most organisms exposed to ionizing radiation. Although radiation does produce disruption of many functions, the changes and shortening of life resulting from radiation are significantly different from those associated with the aging process. However, aging and radiation effects do have some common features. For example, both are accompanied by alterations in the structure of the gene transmitting DNA molecule.

Another aging process that has received considerable laboratory attention is the cross-linkage or eversion theory. The initial research was directed towards collagen, the most abundant body protein found in the noncellular component. One strand of the polypeptide that composes collagen is gradually chemically linked with another, reducing the elasticity of the material. Some investigators have claimed that cross-linkage occurs in other proteins in the body, particularly those within cells.

Two interesting theories are the free-radical and the immunologic theory of aging. Free radicals are highly reactive molecular fragments which are ubiquitous in living substances and are produced by normal metabolic processes, as well as exposure to ionizing radiation. Initiators of free radicals include ozone, the allotropic form of oxygen, and hydrogen peroxide. However, it is not known whether ozone is produced internally in the human body. The introduction into the body of free-radical inhibitors has been carried out with mice with some success. The existence of free radicals within the body and their deleterious effects upon the central nervous system (CNS) cannot be ignored. But it has yet to be demonstrated how to reduce the deleterious effect without producing adverse side effects.

Wolford has given considerable attention to the immunologic theory of aging. He believes that the phenomenon called autoimmunity is one of several aging processes that may stem from a common “first cause” or single etiology.

There is little doubt that the immunologic processes in the advanced years of life are considerably altered from that found in the young and middle-aged adult and contribute to many of the disabilities that are present in late life.

It is conceivable that the autoimmune process is responsible for the loss of brain cells in humans as well as in experimental animals.

Psychological Theories

Theories of aging emanating from psychologists and related behavioral sciences are almost as numerous and diversified as those coming from the biological scientists. Psychological theories of aging are often the extension of personality and developmental theories into middle and late life. Erikson is one of the few theorists who have acknowledged the state of late adulthood. He holds that at this stage of life the status of ego integrity is of fundamental importance. The basic conflict is between the acceptance of one's life as useful and successful versus a sense of despair and fear of death. Such personality theories usually consider the innate human needs and forces that motivate thought and behavior, and the modification of these biologically based energies by the experience of living in a physical and social environment. In early childhood, according to the theories of the development of personality, the physiological changes of the growing child and the interaction with the mother set the stage for basic personality characteristics and determine the

relationship between the existence of the individual and his environment. There is no doubt that certain often unidentified characteristics are set early in childhood. There is no escaping the fact that as humans pass through their life experience they become increasingly different rather than similar. This divergence in psychological and behavioral characteristics continues as a response to the large array of possible learning and living experiences. The increasing differences seems to continue until old age when it is possible that the very aged return to greater similarity in certain characteristics, as they share similar declines in biological functioning and socioeconomic constraints.

Neugarten and his associates have attempted to explore patterns of personality in middle and late life. They concluded that when 60-year olds are compared to 40-year olds, the former see the environment as more complex and dangerous. The older adult is less ready to contribute actively to society and to influence persons in his environment; he moves from an outer to an inner world orientation. In addition, older men seem to be more conscious than younger men of their own "affiliative, nurturant, and sensual prompting." Older women become more self-accepting of their own "aggressive and eccentric impulses."

Much of the investigation concerned with psychological functioning in the aged is directed towards cognitive function and learning. It is evident that

the decline in intellectual functioning does not affect all elderly people equally and that some elderly people preserve their intelligence late in life. This maintenance of psychological capabilities appears to be related to a number of variables including general health, educational attainment, lifelong patterns of learning, and economic conditions. Such studies give credence to a so-called cybernetic or activity theory. The proponents of this theory maintain, “To become functional early in life, neurons must be activated. To retain their position of control, they must be reactivated repeatedly. We believe that aging involves deterioration of neuronic control which proceeds more rapidly if the cybernetic control systems are not used.” Thus the cybernetic theory implies that previously established patterns of learning and social activity are the determinants of patterns in late life.

The Older Population

In the United States there are approximately 20,000,000 men and women aged 65 and over. The 1970 census showed that the older population (i.e., 65 years and over) increased faster in the preceding ten-year period than the remaining population,—an increase of 21.1 versus 12.5 percent. Of even greater importance to the nursing home is the increase of those aged 75 and over. This truly aged group (75+) increased by 37.1 percent. At least one in every 11 persons in the United States is 65 or over. There is considerable variation from sate to state in the percentage of 65-year-olds and over. Florida ranks first with 14.5 percent. In 1900, 4.1 percent of the population of the United States were in the older age group. By 1965 this figure had increased to 9.4 percent. While the percentage has doubled, the actual number of aged persons has increased six to seven-fold, i.e., from 3 to more than 20 million.

At the turn of the century the difference in the number of elderly men and women was not significant. Of particular importance to today's society is the growing predominance of women. Even though there are more boys than girls born, the longer life expectancy for females results in a gradual shift in percentages; therefore, after the age of 18 there are females for every 100 males in the total population. In the population 65 years and over, there are 138.5 females per 100 males. This proportion increases after age 75 to 156.2

females to every 100 males. The ever-growing number of widows and single elderly women is presenting a very serious problem, as it is necessary to find avenues of social participation which are rewarding to single elderly women as opposed to married elderly men and women.

Retirement

Although age 65 is often used as the date for enforced retirement and for the beginning of social security benefits, the assumption that most individuals at age 65 experience a major change in their physical health and mental efficiency is very misleading. Generally speaking, individuals between 65 and 75 are healthy and capable of living rewarding lives. From a health statistical viewpoint, age 75 is a more important date than 65 because life expectancy at age 75 is about nine years and it is then the health problems increase significantly.

Persons 75 years or older are restricted in their activities because illness confines them about 12 days more per year than those age 65 to 74. The person in the older age group is in bed at least eight days more per year, and is limited in general activity as the result of chronic conditions. Of persons 75 and over, 23.7 percent are unable to carry on a major activity as opposed to 9.7 percent of those between 65 and 74 years. Individuals of 75 or over are often referred to as aged persons. This class comprises 8.1 percent of

the institutionalized, as opposed to 2 percent of those between 65 to 74 years.

There is no doubt that compulsory retirement and retirement because of poor health account for many people leaving the labor force. However, considering the persons who are compelled to retire because of employer policy, there is no doubt that a significant percentage would be capable of functioning for at least five to ten years past the retirement age. Compulsory retirement plans are primarily associated with economic conditions and the condition of the labor market rather than with the individual's capability of performing in some financially rewarding capacity.

Prejudice

Elderly people are the victims of widespread prejudice and bias. Discrimination takes all forms, but one of the most difficult problems is the fact that elderly people are ridiculed when they continue to strive for love and affection, seek pleasure, and wish to maintain their self-esteem. This widespread prejudice is the result of early acquired attitudes towards the aged and can be attributed to a number of factors including socioeconomic changes. Unfortunately, these prejudices are found not only in the lay public but also in professional and volunteer workers who are products of the society and therefore bring to their relationship with elderly people the predetermined attitudes and patterns which are common in society. A British

scientist noting the extent of this prejudice has referred to it as *gerontophobia.* If the elderly persons are to receive the care which they need and deserve, it is important that these prejudices be eliminated, and their previous contributions and present values and needs be recognized.

Physical and Mental Health

In the older population the close relationship between physical and psychological state is particularly apparent. Chronic illnesses are prevalent and their occurrence increases steadily with age. In earlier adulthood, that is, up to 45 years of age, 45.3 percent of persons have one or more annoying chronic condition. Fortunately these produce limitations of major activity in only 7.4 percent. Between the ages of 45 and 64 chronic conditions are present in 61.3 percent and limitations of activity in 18.3 percent. After age 65 chronic disorders increase to 78.7 percent and disability to 45.1 percent. Those bedfast comprise 2.3 percent of the aged, while 6.1 percent are confined to their rooms or living quarters. Of the remaining, 86.2 percent can go out without difficulty, while 5.4 percent must exert considerable effort in order to venture out from their confined environment. Obviously confined persons are in danger of isolation and have difficulty maintaining social activity, intellectual stimulation, and opportunities for learning. This undoubtedly accounts in large measure for their decline in mental capacities. The decline in intellectual and mental abilities have a clear relationship to

institutionalization in approximately 80 percent of the cases studied.

Need for Self-esteem

Self-esteem is a composite of innumerable self-ratings that are socially influenced, but in a large measure constructed, measured, and valued by the individual. Two components of self-esteem, which are often extremely important to the elderly person, are his measure of whether he feels his life has any value to himself and to others, and the more subtle but extremely important measure of his capacity to deal successfully with physical disease and trauma. Some individuals believe that they have resources that make it possible for them to survive any period of illness successfully. However, there are others who do not have this reserve strength and are completely at the mercy of others to take care of them during an illness. Some individuals can control this situation by economic resources, while others must be highly dependent upon being liked and respected, and being considered sufficiently worthwhile by others that they will be adequately cared for during their illness. Chronic disability plays an important role in these measures of self-esteem, since a disabled person may find it very difficult to feel that his life is meaningful and justified and, in addition, may deplete his resources so that his comfort and survival are tied to the goodwill of others.

Types of Mental Problems in the Aged Population

Health and service professionals working with elderly people refer to the frequency of hypochondriacal and depressive reactions. Obviously, these professionals are working with elderly who are in need of help whether it be medical or socioeconomic. Therefore, in a cross-section of elderly people the question arises, "How often does one encounter these reactions?" One of our early studies indicated that 40 percent of elderly people were free of psychological problems and another 54 percent were functioning well enough to be classified as nonpsychotic even though they had various mental symptoms. The remaining 6 percent were psychotic but functioning at a socially acceptable level in the community and participated in our research. Although it would be convenient for discussion purposes to indicate that the psychoneurotic could clearly be separated into a distinguishable diagnostic group, this was not actually the case. Thirty-three percent of all of the subjects had mild to severe hypochondriasis. Of the approximately 11 percent classified as severely psychoneurotic, depressive features and "intense body concern," that is, hypochondriasis, were major features of the psychoneurotic reactions. Of interest are the group of psychotic elderly individuals who were functioning in the community. What permits these individuals to function at a socially acceptable level? The study includes a social-activity score, and this does appear to be an important dimension. The neurotic group was markedly less active in a social sense than the "normal" subjects. Thus the psychotics

approached the normal level of social activity. They were able to hold in check and balance their psychotic thinking (which was detected by a psychiatric examination) by maintaining a near-normal level of social activity.

The Use of Psychiatric Facilities

Kramer, et al. are responsible for most of the following information. In 1946, state, county, and private psychiatric hospitals accounted for 42 percent of all hospital beds in the United States. About 80 percent of the mental beds were located in state and county mental hospitals. In 1969, psychiatric beds had dropped to 31 percent of all hospital beds, but 80 percent of the mental hospital beds were still in state and county hospitals. This happened despite the fact that 1400 general hospitals report routinely admitting psychiatric patients and that over 2000 outpatient psychiatric clinics were in operation. Studies of first admissions to public hospitals continue to show that certain persons are more vulnerable to mental disorders than others. These contributing factors hold regardless of age; socioeconomic group; color; urban as compared to rural resident; and marital status. Between 1946 and 1955, the number of first admissions being returned to the community increased from 50 to 63 percent. However, for those who remained in the hospital longer than one year the chances of ever returning to the community decreased rapidly with increasing length of hospitalization. Such patients are usually diagnosed as schizophrenics and they have a high likelihood of growing old in the hospital. During this same period, the public mental hospital continued to struggle with the problem of providing medical and psychiatric care to large numbers of aged with brain syndromes associated with senile brain disease and cerebral arteriosclerosis.

It does appear that between 1950 and 1968 there was either a remarkable change in the number of mental disorders of the senium, or alternatives for prolonged hospitalization were being developed, as there was a decrease of 32.1 in the percentage of resident patients in public hospitals with mental disorders of old age. Kramer also points out that there was a sharp reduction in first admission for patients 65 years and over. Many state hospital systems adopted policies that resulted in these reductions which, in turn, led to an increased use of nursing homes and related facilities for aged patients. As a consequence, between 1962 and 1965 the rate of first admission for the age group 65 years and over dropped by 9.1 percent for males, 11.5 percent for females; and 10.5 percent for both sexes combined. Between 1965 and 1969, the corresponding decreases were 19 percent for males, 43 percent for females, and 31 percent for both sexes combined.

Between 1946 and 1968, there was a rapid growth of *outpatient psychiatric clinics.* Approximately 500 clinics were functioning in 1946. This number expanded to almost 2000 by 1968. However, these facilities have had an interesting distribution when one compares the age at termination of the patients they served. These facilities have been used to a large extent by children and adolescents under 18 years who account for about 33 percent of the patient load. Adults in the age group 18 to 44 years account for another 51 percent; patients 45 to 54 years for 10 percent; 55 to 64, 4 percent; and 65 years and over only 2 percent. On the basis of population composition alone,

the aged are clearly under represented, as at that time they composed approximately 9 percent of the population. In addition, *day-care services* seemed to be playing a relatively minor role in the care of aged patients. Of the estimated 11,000 admissions (nationwide basis) to day-care programs of community mental health centers during 1969, only 2.6 percent, or 260 persons, were 65 years of age or older. Day activities of other types, such as workshops, do exist for elderly people, but they are designed for prevention rather than treatment, and serve the relatively normal aged. Although useful, there are too few to have any substantial impact upon the health and adjustment of the elderly.

Community mental health centers, as defined by the criteria necessary for Federal funding, also do not appear to be carrying a proportionate load of aged patients. As of 1969, only 4 percent of admissions were 65 years and over. Psychiatric services in general hospitals are carrying a greater load, as 13 percent of the termination from these services were 65 years and older.

In the last 20 years the number of *nursing homes* in operation have increased twentyfold and the number of beds over thirty times. Much of the recent increase has been due to the impact of Medicaid and Medicare.

Among the institutionalized elderly individuals suffering from mental illness, the distribution is approximately as follows: 51 percent are patients in

state and county mental hospitals; 43 percent are in nursing homes and related facilities; 5 percent are occupants of Veterans Administration beds; and 1 percent are in private mental hospitals. However, the percentage of mentally ill aged in nursing homes is probably a minimum estimate, as Kramer and his colleagues question the accuracy of the diagnosis submitted from nursing homes. They believe that the actual number of mentally ill aged in nursing homes has surpassed the number of mentally ill aged residents in all other types of psychiatric inpatient facilities.

Depressive Episodes in the Elderly

Evidence indicates that depressive episodes increase in frequency and depth in the advanced years of life. Elderly subjects are aware of these more frequent and more annoying depressive periods, and they report that during such episodes they feel discouraged, worried, and troubled and often see no reason to continue their existence. However, only a small number admit entertaining suicidal ideas, but a larger percentage state that during such depressive episodes they would welcome a painless death. During such periods, the elderly are more or less incapacitated, but they rarely seek medical help. This type of reaction must be distinguished from the much more serious psychotic depressive illness which is a common cause of hospitalization.

The observation that elderly subjects were aware that they were experiencing more frequent and more annoying depressive episodes is based upon a study made some years ago and confirmed by more recent longitudinal studies. Observations indicate that there is a difference in the process leading to depressive episodes in the elderly as compared with the middle-aged or young adults. Guilt and the turning inward of unconscious impulses (interjection) that are unacceptable to the ego are common mechanisms in the depressions of young adults. This is not the case with elderly subjects. Depressive episodes can be readily linked with the loss of so-

called narcissistic supplies. The older subject becomes depressed when he cannot find ways of gratifying his needs; that is, when social environmental changes or the decreased efficiency of his body prevent him from meeting his needs and reducing his tensions. He is likely to have a loss of self-esteem; hence he feels depressed.

There is clear evidence that the frequency of depressive episodes is influenced by the life situation. For example, three groups of subjects reported mood disturbances occurring at least once a month and lasting from a few hours to a few days. The highest number of subjects (48 percent) reporting mood disturbances occurred in persons over the age of 60, unable to work, attending an outpatient clinic for various physical disorders, and suffering financial hardships. Depressive spells occurred in 44 percent who were retired, in good health, and in acceptable financial condition. However, only 25 percent of subjects continuing to work past the usual age of retirement reported such experiences. Most of the subjects in the three groups denied that they had experienced depressive spells of similar frequency or duration earlier in life.

To fully appreciate the factors that are important to depressive episodes in the elderly, particular attention must be given to attitudes toward chronic disease, disability, and death. When studied longitudinally, the importance of physical health as a determinant of depressive feelings becomes increasingly

evident. It appears that the aged person can tolerate the loss of love objects and prestige better than a decline in health, as physical disability often disrupts mobility and results in partial isolation. Hence the opportunities for restoration of self-esteem are reduced.

Important factors that contribute to depressive feelings in elderly persons are often conscious, as approximately 85 percent of elderly subjects are able to identify the specific event or stimulus that precipitated the feelings of depression. Therefore, many depressive episodes in the elderly are a realistic grief response to a loss and not primarily influenced by unconscious mechanisms. Hence the symptom is relieved when the actual loss or threat is removed or compensated for.

Simon believes we need to know more about the crisis of bereavement of widowhood not only in late life, but also in the middle years. There is evidence that the death rate is increased among newly widowed persons for several years at least. Generally, there are more women than men among depressed persons in their fifties and sixties. After 65, it is about evenly divided between women and men. Simon states that the bereaved constitute a high-risk group that must be recognized and offered help.

Somewhat different statistics given in the Russian literature indicate that after the age of 50, women are three to four times more likely than men

to develop depressions. However, when men become depressed, they are more likely to be in the age group 50 to 59, while women are more likely to be between 60 and 69 years of age. A smaller peak is reached for women who have their first depressive episode before age 45.

As to premorbid personality traits, although a variety were common, only 10 percent presented evidence of premorbid abnormalities which could be considered pronounced psychopathology.

"Organically colored" depressions were identified in 13 percent of those between the ages of 50 and 59; 8.3 percent between 60 and 69; and 28.7 percent after the age of 70. Before the age of 70, anxious-hypochondriacal and anxious-delusional syndromes associated with the depressions were the most common occurring in 31.5 and 26.7 percent, respectively.

Depression and Dementia

Depressive symptoms are not unusual in patients with organic brain disease. The majority of clinical studies indicate that depressive symptoms are more common in cerebral arteriosclerosis and cerebral vascular brain disturbances than in senile dementia. One explanation is that insight is less frequently observed in senile dementia.

Some years ago depression in the elderly was often considered

"prodromal depression" or the "neuroasthenic stage" of cerebral arteriosclerosis or senile dementia. English investigators have demonstrated that elderly depressives do not subsequently develop cerebral degeneration any more than do elderly people in general.

Wang uses the term *brain impairment* to designate measures of loss of brain function based on a number of laboratory procedures including EEG (electroencephalogram), cerebral blood flow, cerebral metabolism, etc. The degree of dementia is determined by psychological tests and/or clinical measures of intellectual performance and emotional variations. Wang and Busse point out that there is all too often a lack of correlation between these two types of evaluations. Of particular concern are the discrepancies found in patients with a precipitous decline observed clinically, but not paralleled by evidence of rapid physiological brain changes. Careful consideration of factors, such as general physical health, economic status, social environment, and previous living habits, forces the clinician to concede that he is faced with an illness of multiple etiology.

Pseudodementia

Depressed elderly patients occasionally present a clinical picture of pseudodementia. According to Post, such patients appear to be severely perplexed and disoriented, and have memory defects. They may show the

"syndrome of approximate answers." Two observations help to exclude the existence of true organic brain disease: (1) The history indicates a recent abrupt onset of defective memory and judgment plus depressive symptoms; (2) negativism is common; for example, the patient replies, "I don't know," rather than confabulate as do many patients with brain impairment.

To summarize, for the latter part of the life span of most Americans—particularly for those over the age of 65—life is replete with events that are losses. In addition, the elderly person often does not have the socioeconomic resources that would permit him or her to deal effectively with such losses. The large number of elderly who do maintain a reasonable emotional balance is evidence of the capacity of people to withstand stress, deprivation, pain, and discomfort.

Hypochondriasis

Hypochondriasis is another common mental problem that is encountered in elderly people. Hypochondriasis is ubiquitous but particularly common in elderly people who seek help in a university clinic. It is generally accepted that hypochondriasis is not a disease entity but a syndrome consisting of an anxious preoccupation with the body or a portion of the body which the patient believes is either diseased or not functioning properly. Hypochondriasis may be part of a symptom pattern in a neurosis, a psychosis, a psychophysiological reaction or a personality disturbance. Cross-sectional and longitudinal studies have provided an opportunity to observe hypochondriacal tendencies in elderly subjects residing in the community or seeking medical help. Of elderly people in the community, 33 percent were found to have varying degrees of hypochondriacal symptoms. A much greater number showed what was called "high body concern," because in many of these cases the degree of concern was probably reality determined, that is, organic disease actually existed and the complaints were not solely of neurotic origin.

In the *psychodyrmmics* of hypochondriasis three major components are recognized: (1) The patient's interest may be withdrawn from other persons or objects around him and be centered upon himself, his body, and its functions; (2) the restrictions and discomforts produced by this psychic

illness may be utilized by the patient as punishment and partial atonement for guilt resulting from feelings of hostility and a desire for revenge; and (3) the symptom can be caused by a shift of anxiety from some specific area of psychic conflict to a less threatening concern with bodily function. It has been our observation that although the guilt mechanism is found in young hypochondriacs, it is rarely encountered in older persons. The older person's high body concern is more likely to result from a withdrawal of his interests in other persons or objects, and/or displacement of his anxiety.

Observations indicate that the frequency of persistent hypochondriacal syndrome encountered in the patient population is not necessarily paralleled in our community subjects. Studies showed that hypochondriacal episodes were not infrequent in elderly persons who did not necessarily seek medical help. The depressive element in the hypochondriacal reaction in community subjects was easily recognized. For reasons previously mentioned, the investigators preferred to rate "high body concern." Other scales, based on specific criteria, were used to rate the subjects in a number of areas of functions and activities. The results of the entire medical (physical) examination were summarized in terms of a five-point scale representing the objective health status of the subject.

A subject's health was considered to be medically good if there were no symptoms of disease or, if the symptoms existed, the individual suffered no

more than 20 percent limitation of normal functioning. Subjects with limitations of 20 percent or more were considered to be in poor health. The subject was also given an opportunity to make a self-assessment of his health. In this particular study a number of other observations were included as important. Consideration was given to the IQ as determined by performance on the WAIS (Wechsler Adult Intelligence Scale). The existence of excessive preoccupation with health in the psychiatric examination was considered, as well as a count of symptoms or complaints from the physical examination. Morale was measured in terms of a Havighurst Attitude Scale, and the level of activity was determined by an Activity Scale. Social placement factors were also included in the study. Considered were age, sex, race, change in work role, and socioeconomic status. Each subject had an opportunity by letter and personal contact to be informed of his objective health status as evaluated by the examining physicians.

The data from the original observations indicated that in 65 percent of the subjects there was congruity between self-assessment and the medical evaluation of health. Incongruity of self-assessment of health and medical evaluation occurred almost without regard of the objective health status. Of the subjects considered to be in good health, 31 percent were health pessimists, and of those in poor health, 44 percent were optimists. Thus, approximately one-third of elderly persons could not be relied upon to give an accurate self-assessment of their physical health. Subjects whose health

was medically good and who had realistic self-appraisal were likely to be older (that is, age 70 or above), to occupy a higher social status, and to maintain a high level of social activity. In subjects of poor health, it appeared that the younger was more likely to be pessimistic, while the older subject used denial and maintained an optimistic view. There was also a sex difference; pessimism was more characteristic of women, in spite of the fact that the mortality rate favors the older woman. The pessimistic or hypochondriacal person was likely to have low morale, to be poorly adjusted to the environment, to report past and current periods of depression, and to express feelings of neglect.

The persistent optimist uses his opportunity to pursue the busy life to the point where he is too busy to recognize the appearance of physical disease and disability. Consequently, the optimist is unlikely to have the attention of a physician until the disease has become so serious that it cannot be denied. At that point such a person often becomes seriously depressed and requires support and skillful redirection to activities consistent with the disability. The person using the mechanism of denial should not be seen as a courageous person. A courageous person realistically appraises the situation, determines the odds, accepts the challenge, and moves ahead.

Organic Brain Syndromes

The sequence of the disease discussed (disorders caused by or associated with impairment of brain-tissue function) is essentially that found in DSM II *The Diagnostic and Statistical Manual of Mental Disorders.* Under the entry of organic brain syndrome are included all those diseases which result in mental changes that can be attributed to diffuse or significant involvement of brain-tissue function. The disease should be designated as either psychotic or nonpsychotic, and the extent of the mental change whether it be mild, moderate, or severe, should be identified. Furthermore, it is important to distinguish acute from chronic brain disorders. The term *acute* is not used to indicate a sudden onset of the disease, but implies reversibility. Both "acute" and "chronic" are descriptive terms which are unrelated to etiology, as the same causative agent can produce in one individual a temporary, that is, acute, disorder, while in a second individual it may produce a chronic, that is, permanent, disability.

The diagnosis of an acute brain disorder indicates that the patient is expected to recover and that his physiological brain functioning will return to normal. Unfortunately, particularly for the elderly patient, the experience of an acute brain disorder often leaves the patient with a prolonged adverse effect upon psychological functioning. The recovered elderly person is seriously concerned that the brain disorder heralds the beginning of

intellectual decline and death. The anxiety and depression associated with the recovery period from an acute organic brain reaction must be recognized and relieved. Generally speaking, an acute brain disorder that occurs in older persons is either a toxic or ischemic reaction. Recovery is dependent upon elimination of the toxic substance and restoration of the brain to normal metabolic functioning.

The criteria are limited to distinguish psychotic from nonpsychotic reactions. DSM II [p. 31] describes patients as psychotic "when their mental functioning is sufficiently impaired to interfere grossly with their capacity to meet the ordinary demands of life." The description of the nonpsychotic organic brain syndrome is not extensive. It is mentioned that mild brain damage often manifests itself by hyperactivity, short attention span, easy detractibility, and impulsiveness. Conversely, sometimes the patient is withdrawn, listless, perseverative, and unresponsive. It is also evident that some symptoms, particularly in older individuals, are superimposed responses to the mental changes that are the direct result of the organic brain change.

According to the accepted diagnostic nomenclature, the word "dementia" occurs in relationship to senile and presenile dementias that are considered psychoses associated with organic brain syndromes. Unfortunately, there is considerable discrepancy as to how clinicians and

investigators utilize the term dementia. Webster's *Third International Dictionary* defines dementia as "A condition of deteriorated mentality, however caused; mental abnormality that is characterized by a marked decline from the individual's former intellectual level and often by emotional apathy." The 1969 edition of *A Psychiatric Glossary* defines dementia as "an old term denoting madness or insanity; now used entirely to denote organic loss of intellectual function." John G. Allee's version of Webster's definitions calls dementia "an incipient loss of reason." This broadening of the definition is the trend in medicine, as the term is being increasingly used to designate any intellectual decline or organic cause, whether it be mild, moderate, or severe. This possible conflict and confusion in the diagnostic terms should be carefully considered by a psychiatrist, as the litigation of wills, testamentary capacity, and competence frequently rest upon an accurate diagnosis and description. The nonpsychotic nature of an early senile dementia should be clearly stated.

Organic brain syndromes are likely to be accompanied by important alterations in the person's thinking and behavior. The so-called cognitive functions which include comprehension, calculation, problem-solving, learning, and judgment are impaired. Memory is spotty and orientation for time, place, and person is faulty. Emotional responses are easily elicited and are disproportionate or inappropriate to the stimulus. This basic clinical picture characteristic of an organic brain disorder may be associated with a

wide variety of other symptoms. The type and severity of the symptoms are not necessarily directly proportional to the extent of the physiological disturbance, as they are often influenced by psychological patterns of long standing and the particular psychological state of the patient at the time the physiological disorder develops.

Dementia in Late Life

Several of the dementias that develop in the latter part of life appear at least in some cases to be influenced by genetic factors. The evidence for genetic transmission is strong in some dementias and less in others. Still, in other diseases, the principle of "genetic heterogeneity" appears to operate, which states that the phenotypic similarity, that is, the clinical manifestations of the disease, may be produced by genotypically different conditions. Some of the differences reported in various studies of heredity may be distorted by the diagnostic criteria used.

Pratt reports on more than a dozen families in which a condition developed that is identical with if not indistinguishable from Alzheimer's disease that is transmitted as a regularly manifested dominant trait. The regular transmission of dementia differs from the common form of Alzheimer's disease, for a slight though definite tendency to familial aggregation of the disorder is common. Furthermore, Pick's disease, while

pathologically distinct, is clinically difficult to differentiate from Alzheimer's disease. However, Pick's disease does appear to be associated with a dominant autosomal mode of inheritance. The transmission of senile dementia appears to be either a multifactorial or a dominant mode of transmission. Close relatives of patients with senile dementia have a risk four times that of the general population of developing the disease. Studies conducted in Sweden have indicated that senile dementia is determined by a single autosomal dominant gene carried by 12 percent of the general population and reaching 40 percent manifestation at the age of 90 years. This evidence indicates that senile dementia is qualitatively distinct from ordinary senescence. It is also reasonable to assume that some specific enzyme or other biochemical defect is the first cause of senile dementia. Alzheimer's disease, the most common of the presenile dementia, was not found in excess within families of senile dementia, suggesting that it is in part determined by factors that do not operate in senile dementia. Pratt concludes that the evidence is more in keeping with a polygenic inheritance, with a shared predisposition to both Alzheimer's disease and senile dementia. As to concordance rates in identical twins, senile dementia occurs in 43 percent from monozygotic and 8 percent from dizygotic twins. If Alzheimer's disease affects one of a monozygotic pair, it is highly likely that the other will develop the same manifestations of dementia.

Slow Virus and Dementia

The possibility that some of the dementias in late life can be attributed to a slow virus cannot be disregarded. In 1968, Gibbs and his co-workers reported the transmission of a disease from a patient diagnosed as having Creutzfeldt-Jakob's disease to a monkey. The following year the same investigators reported successful transmission from man to monkey in six of eight patients suffering from the same disorder, which is also known as spongiform encephalopathy. Other investigators have reported the observation of viruslike particles by electron microscope in patients with spongiform encephalopathy. Familial instances of this disease have been reported, but this may be the result of the transmission of the slow-acting virus rather than the result of a genetically determined condition.

Differential Diagnosis

This discussion of differential diagnosis is primarily concerned with senile dementia and the presenile dementias known as Alzheimer's and as Pick's disease. Experienced clinicians have repeatedly found that there is no reliable criteria to distinguish senile dementia from Alzheimer's or from Pick's disease. There are clear-cut anatomical differences between Pick's and Alzheimer's disease, but most pathologists doubt that any valid histological distinction can be made between senile dementia and Alzheimer's disease. To further complicate the picture, there is in at least 20 percent of autopsy cases a coexistence of senile and arteriosclerotic brain changes. Post does not agree

with the assertion that patients with Pick's disease tend to repeat words or brief phrases in a stereotyped manner and that they are less restless and hyperkinetic than those with Alzheimer's.

Both Alzheimer's and Pick's disease have an early date of onset. Hence the age of the sick patient is often used as an important diagnostic criterion. Some clinicians believe that senile dementia, in contrast to Alzheimer's disease, is accompanied by other evidence of exaggerated aging affecting the entire body. Frequently there is a general wasting of muscles, shrinkage of soft tissue, loss of elasticity of the skin, thinning and graying of the hair, and easy fatigability. However, the fact that senile dementia has its onset considerably later in life could explain why these aging symptoms are also observed. Hence, they could be an aging phenomenon and not necessarily a manifestation of the disease.

Alzheimer's Disease

This illness was described by Louis Alzheimer in 1906. Its average onset is the mid portion of the fifth decade of life. Occasionally, it begins in the fourth decade of life. It is probably the most common of the presenile dementias as it is found in 4 percent of the autopsies in a psychiatric institution. Its sex distribution is in favor of females, the ratio being three to two. The familial possibilities of this disorder have been discussed earlier (p.

79). Another clinical feature that may have importance is the recognition that in spite of the loss of memory, illogical reasoning, etc., insight is often preserved in patients with Alzheimer's disease which results in a distressing awareness of impending insanity. As the deterioration continues, speech becomes seriously disturbed and involuntary movements of arms and legs are frequently observed. The course of the disease is progressively deteriorating with invariable fatal conclusions. The duration of the disease varies from two to ten years and sometimes more. The average is usually believed to be approximately four years. No specific treatment is known for this disorder, and symptomatic environmental measures are the sole relief that can be offered.

Pick's Disease

Pick's disease is generally characterized as a presenile dementia, although it is doubtful that it is the result of the premature onset of an aging process. The age of onset is very similar to that of Alzheimer's disease. It most frequently appears at approximately age 54, although occasionally it occurs as early as the fortieth year of life. The recognition of this disease is attributed to A. Pick, who lived in Prague and first published his work in 1802. Pick's original purpose was to illustrate the different types of aphasic manifestations which can occur in senile brain diseases. It was really the efforts of other scientists that established Pick's disease as a distinct clinical

pathological entity. It is truly a rare disease, and the female ratio is two to one. Again, the onset of aging is one of the primary distinguishing features of Pick's disease to senile dementia. Symptoms of focal cortical damage, usually frontal or temporal in origin, are sometimes of help. Pneumoencephalographic studies reveal the areas of localized atrophy. The areas of most frequent involvement and their characteristic pathological condition are described in Chapter 4.

Subtypes of senile dementia have been described by Ehrentheil. The distinctions are often overlapping but include: (1) simple deterioration; (2) the depressed and agitated type; (3) the delirious and confused type; (4) the hyperactive type with motor restlessness and loquaciousness; and (5) the paranoid type.

Experience indicates that approximately 50 percent of patients follow a pattern of simple deterioration, with transient episodes of a wide variety of reactions. However, a substantial number deteriorate without any dramatic events accompanying the illness, and these people do not produce a serious disturbance in the community. Hence they are kept in a protected environment until they have reached an advanced stage of senile mental deterioration. Of the disturbing types of reactions, the paranoid are probably the most common and constitute 15 to 25 percent of the major manifestations of this disorder.

Pathophysiology of Cerebral Vascular Disease

Cerebral vascular disease is often explained on the basis of vascular insufficiency. Unfortunately, cerebral vascular insufficiency is not a phenomenon that is amenable to direct observation. We are dependent upon assuming its existence on the basis of other observations. Vascular insufficiencies are believed to exist when it appears that the blood supply of the brain is inadequate to meet its metabolic needs. It may be present continuously, or occur intermittently when the blood flow falls below acceptable levels, or it could occur if the metabolic activity of the brain increased to a point that the normal supply was insufficient. There is a natural tendency for a clinician to assume that the blood pressure is the primary contributor to the presence or absence of vascular insufficiency. It must be remembered that it is the cerebral blood flow, not the blood pressure, that is the ultimate factor in determining the availability of oxygen to the brain. Cerebral blood flow, usually expressed in ml. of blood per 100 g. of brain per minute, is the result of two forces. Although blood pressure is important, it is only one of several factors that must be considered in cerebral blood flow. The first is the available pressure called the pressure head, that is, the difference between the pressure on the arterial and that on the venous side. The second factor is the cerebral vascular resistance. It is influenced by the structure of the walls of the blood vessels, by the functional tone of the vessels, the pressure on the vessels from without, that is, the intercranial

pressure, and the viscosity of the blood passing through the vessels. Cerebral blood flow is clearly an extremely complicated phenomenon, as it is also influenced by the metabolic demands of the brain. If the brain metabolism is decreased, cerebral blood flow is also decreased. For this reason, it is often extremely difficult to decide if a lowered cerebral blood flow may be contributing to a decrease in brain metabolism, or is its result.

The caliber of the cerebral arteries is mainly determined by chemical balance, especially by the concentration of carbon dioxide, CO_2. It is the partial CO_2 pressure in the blood which normally determines the caliber of the cerebral arteries. A rise in the CO_2 pressure of the blood produces cerebral vasodilatation. Interestingly, this takes place without simultaneous systemic vasodilatation, so that the cerebral blood flow is increased until the excess CO_2 is removed. Although many pharmacological agents aimed at improving the blood supply to the brain have been tried, most, if not all, appear to be ineffective. This is because these pharmacological agents produce systemic vasodilation which causes a fall in blood pressure which, in turn, is compensated for by brain vascular changes so that the cerebral blood flow remains unchanged. On the other hand, oxygen, doubtless, has an effect upon the cerebral circulation acting as a vasoconstrictor. The inhalation of 100 percent oxygen produces a fall in cerebral blood flow of approximately 13 percent.

Episodic disturbances commonly referred to as transient ischemic attacks are not infrequent in the older population. The majority of these episodes are probably attributable to thrombi and emboli affecting areas where restoration of collateral supply is possible. However, there is increasing evidence that prolonged, marginal cerebral blood flow can produce degenerative changes in the brain which lead to behavioral and intellectual impairment.

Hyperbaric Therapy

In 1969, the Veterans Administration Hospital in Buffalo, New York, reported that repeated exposures to hyperbaric oxygen (O_2) may have a positive effect on cognitive functioning in elderly patients for the diagnosis of chronic brain syndrome. However, Goldfarb, et al. reported in 1970 that they were unable to demonstrate this effect in a series of randomly selective patients with "organic brain syndrome." L. W. Thompson and his colleagues at Duke University consider their results to be equivocal, but have shown some positive changes in approximately 50 percent of their subjects.

The hyperbaric treatment program used by Thompson et al. consists of thirty exposures to 2.5 atm. of absolute pressure, (the duration of each exposure is 90 min.). The experimental group receives 100 percent oxygen which provides alveolar oxygen (O_2) tensions of approximately 1800 mm. Hg.

The control subjects breathe normal air at 1.3 atm. of pressure which provides alveolar 0_2 tension levels slightly higher than air at one atmosphere.

Psychosis Associated with Other Cerebral Conditions

Cerebral Arteriosclerosis and Cerebral Vascular Disturbance

It is worthwhile again to caution the clinician to recognize that if the mental disturbance is not of psychotic proportions, the condition is classified under nonpsychotic organic brain syndrome with circulatory disturbance, not with cerebral arteriosclerosis. This can be a cause of diagnostic confusion. Furthermore, if the mental reactions result from such problems as cardiac decompensation, it is necessary to include the underlying pathology as an additional diagnosis. (See DSM II, p. 31).

Dementia associated with cerebral arteriosclerosis not infrequently appears before the age of 70. The disease may appear in persons as young as 45 and can develop at any time in the late years of life. As all atherosclerotic diseases, it is more common in males than in females (three times as common in males than in females). Apparently female hormones do play a protective role, and there are some clinicians who advocate the continuation of supplemental estrogenic hormones in females for a number of reasons, including the prevention of arteriosclerotic disease. Vascular pathology is not only confined to the brain, but is usually found in other parts of the body. The duration of the illness is difficult to determine, but the average appears to be near 3.5 years.

Some clinicians indicate that more than 50 percent of cases with cerebral arteriosclerosis demonstrate their first symptomatology by suddenly developing a delirium manifested by confusion, incoherence, restlessness, and not infrequently accompanied by hallucinations. However, this delirious picture does subside and leaves the patient at a considerably reduced functioning level from which he gradually declines further. As previously noted, this gradual decline is first seen as defects of memory and then errors in judgment. Some individuals become very irritable, aggressive, and quarrelsome. In contrast with senile dementia, these patients are more likely to have some insight into the fact that they are losing some of their intellectual skills. Depression complicates the picture, and suicidal impulses may produce a serious problem for the family and physician.

Changes of EEG in Late Life

Focal abnormalities of EEG, predominantly over the temporal areas of the brain, and maximally on the left, have been repeatedly observed in 30 to 40 percent of apparently healthy elderly people. This finding was first reported by Busse et al. in 1955. Since that date the observation of the frequent occurrence of a left-temporal focus in old people has been reported by other investigators. A study of healthy volunteers between the ages of 20 and 60 reveals that only 3 percent of normal adults under the age of 40 years have temporal lobe EEG changes. This increases so that in the 20 years between 40 and 60, 20 percent of the subjects show temporal lobe irregularities. After age 60, the focal disturbance tends to be stabilized, as very few elderly subjects studied longitudinally have developed a focus or have shown an increase in the degree of abnormality once they have entered the latter part of their life.

The exact origin of these foci as well as their significance is still not clear. The localized EEG abnormality is usually episodic in nature and is composed of high-voltage waves in the delta and theta range, occasionally accompanied by focal short waves. The disturbance is found in the waking record, is maximum in the drowsy state, and disappears in sleep. In 75 to 80 percent of the cases the abnormality is at a maximum or completely confined to the left side of the brain. It is not related to handedness, and although it is

evidently episodic in nature, it is unrelated to seizures. There are indications that these temporal foci commonly seen in normal senescence are associated with a localized cerebral circulatory insufficiency.

Another common characteristic of EEG changes is the progressive slowing of the dominant frequency involving the alpha frequency and the appearance of slow waves in the theta or delta range. A slight slowing of the alpha index is not pathognomonic for any particular brain disorder. However, moderate to severe slowing is characteristically found in brain disorders whether they are classified as degenerative or vascular in origin. Elderly subjects in good health are found to have a mean occipital frequency which is almost a full cycle slower than that found in healthy young adults. Furthermore, about 7 percent of the EEG's in the elderly subjects were dominated by slow waves in the theta range, that is, 6 to 8 per second. Since a good correlation has been demonstrated between EEG frequency and cerebral oxygen consumption or blood flow, the slowing of the dominant frequency in the majority of elderly people may indicate a depression of cerebral metabolism.

The correlation between EEG changes with advancing age and reduced intellectual functions indicates that, in residents of old age homes and other institutions, alterations are related to measures of brain impairment. Unfortunately, this correlation is not nearly as clear in subjects remaining in

the community. It is possible that those who live in the community are actually adjusting at a borderline level and may be vulnerable to disruption in functioning which would precipitate the appearance of organic brain disease. The focal disturbances in senescent EEG's have not been consistently correlated with any particular psychological function or measure. However, a review of our longitudinal studies indicates that the presence of a focus in the left anterior temporal region is closely associated with a decline in verbal abilities, while the diffuse slowing in the occipital rhythm is associated with a decline in performance abilities. However, it is necessary to remember that these findings may be influenced by such factors as levels of arousal, medication, and innumerable other influences which require further study.

There appears to be a relationship between EEG frequency and blood pressure, as the correlation between these two variables in healthy elderly subjects is highly significant. Included in a study were also those individuals with compensated heart disease, but who had significantly higher blood pressure than those without heart disease. In these individuals with mild and moderate hypertension, a somewhat faster EEG frequency is associated with less evidence of brain disorder than in those individuals without heart disease. All of these findings suggest that there is an impairment of cerebral vascular autoregulation in many elderly subjects, and consequently the cerebral blood flow has become more dependent upon the blood pressure. It appears that moderate elevation of blood pressure in many individuals helps

to preserve the brain. However, sustained severe diastolic hypertension (106+) is often associated with intellectual decline.

EEG's taken of elderly subjects in their sleep reveal some very important changes. Elderly subjects require a longer period to fall asleep and their sleep is lighter. There are more frequent wakenings, and deep sleep (stage 4) virtually disappears. These changes are considerably more pronounced in persons with significant organic brain disease.

The Nursing Home

One of the most difficult tasks is the selection of a nursing home for a chronically ill person, particularly if mentally impaired and advanced in age. If one approaches such a complex task, it is essential not only to have guidelines and standards for the services in a nursing home, but also one must evaluate the patient so that the environment and activities selected are best suited to meet his needs. For this purpose it is necessary to evaluate the extent of the overt incapacities which reduce the individual's capabilities for his own daily personal care; for instance, the inability of a person to bathe and dress without assistance, and the physical and mental capacity to be responsible for mobility, either walking or through private or public conveyances.

Other changes occur in the later years which are not as easily recognized and yet are very important to the total functioning of the individual and for life satisfactions. For example, there may be a decline in a person's capacity to taste, smell, feel pain and temperature changes, to hear, and to see. The process of senescence, or so-called normal aging, brings with it a decline in the ability to hear certain high-frequency sounds and to separate from a number of sounds those which are most meaningful. It also affects the speed in which a person can adjust when moving from a dark to a lighted room or vice versa. Also, the elderly person requires greater illumination to work and to see such things as utensils and food. Such changes

require that the environment be structured to meet the needs of the elderly. This environment is quite different from that which is best suited for the health and adjustment of a younger person. The age changes mentioned above appear relevant to the criteria used in selecting a nursing home.

What Is a Nursing Home?

Unfortunately, what is legally considered a nursing home may be considerably different from one locality to another. A dimension was added to the long-term health care of the elderly when the term "extended care" was introduced by Public Law 89-97 amendments to the Social Security Act of 1965. Extended care and the extended-care facility conceived under Medicare legislation are intended to be an extension of hospital care. It is meant to be an active-treatment program aimed at restoring the patient to an acceptable level of functioning within the community. The term "extended care" has been, but should not be, confused with long-term care or continuing care. This type of care involves patients who are unable to remain at home because they cannot, physically or mentally, either independently or with assistance, maintain a satisfactory adjustment. Generally speaking, such long-term facilities are classified as nursing homes, but there are states such as New York that permit one facility to offer both such services, that is, nursing-home care and extended care. Obviously, extended care is oriented towards rehabilitation, while nursing-home care is geared to maintaining life at a level

as satisfactory as possible. There is a financial differentiation, particularly important as extended care can be financed by Medicare. The situation is confused, since it is often difficult to distinguish between the patient's need for extended care and for nursing-home care. In determining eligibility, one of the primary determinants is the prediction of the patient's ability to regain capacity to care for himself. Once it is determined that the patient requires chronic or long-term institutional care, the patient is probably no longer eligible for Medicare benefits, even though his health status may be such that he requires constant attention. Long-term care is often provided in proprietary nursing homes, in a few publicly sponsored chronic-disease hospitals or homes for the aged and infirm, and in state mental institutions.

In selecting a long-term care facility, the advice of a knowledgeable physician, though of value, may have limited use because of the complexity and the fluidity of long-term facilities and programs. The physician, of course, is interested in maintaining good communication with the nursing-home administrator and the skilled health personnel on the staff. He is particularly interested in ensuring that good records are kept so that he can evaluate the health status of the patient and ensure his prescribed medication and programs are accurately followed.

Administration

One of the most serious drawbacks in either a proprietary or public nursing home is usually the remoteness of the director. The owner or the director of a proprietary nursing home should be continually involved with the services, as it is as easy to make the assumption that the home is functioning very effectively because the purchasing systems, the accounting methods, etc., are efficient. It is important to make certain that the administrator does have the capacity to make judgments regarding policy changes in patient care.

Nursing Home Location

Firm guidelines cannot be developed as to the urban, rural, or semirural location of a nursing home. Regardless of where the home is located, there should be sufficient stimuli in the environment to keep the person alert and interested. An elderly person can be very lonely regardless of where the home is located. Many approaches can be utilized to maximize the stimuli from the environment. For example, in an air-conditioned nursing home, externally located pickups transmit into the dining and living areas the familiar early morning songs of birds. Such devices can be extended to a bird identification by song or bird-watching activity which can add an important dimension to living.

The nursing home cannot expect to function effectively as an isolated

unit. It must have intimate and continuing relationships with community activity and resources. The administrator and personnel of the nursing home must have good working relationships with church groups and any other public or private groups or agencies that can be of value to the residents of the home. Periodic visits and projects by such organizations as Girl Scouts have proved to be of great value.

The Quality of Nursing Care

The personnel who come in day-to-day contact with the residents of a nursing home include those associated with the so-called nursing service, the food service, and other supporting service people. Employees associated with the nursing service include registered nurses, practical nurses, nursing aides, and attendants. All of these individuals offer what is called nursing care. It is not merely the administration of drugs and the applications of treatment techniques but an extremely demanding relationship with elderly people that is necessary in order to make the older resident feel that he is understood, that his needs are appreciated, and that his health and well-being are important to those who come in contact with him. A chronically ill elderly person is particularly aware of his high dependence upon nursing personnel, as he can easily be deprived of many satisfactions if they become annoyed or angry with him. Consequently, some patients try to be modest in their requests, so that in the event they are in desperate need, nursing personnel

will adequately respond to their needs. Often an older person feels that he is not being properly cared for but is afraid to express his displeasure because he may antagonize the very ones who are responsible for his care.

Recent studies in Great Britain indicate that there is a serious misconception regarding nursing by many nursing-home administrators. They seem to believe that geriatric patients require less nursing skill and fewer nurses than acute medical and surgical patients. Detailed records and observations indicate that this is not true, particularly in homes which have admitted or accumulated a large number of seriously ill people. The range of diagnoses and treatment regimes is wide, requiring great knowledge and skill, and many of the chronic illnesses are complicated by mental confusion and the burden of fecal and urinary incontinence. Dr. Robin E. Irvien and Miss B. J. Smith reported to the British Geriatric Society in London (Spring, 1970) that many geriatric units require a very high nurse-patient ratio, a ratio of one-to-one being the best.

Serious Illness

Although it is extremely important that the residents of a nursing home have the services of a physician when required, it is obvious that many of the complicated diagnostic procedures cannot possibly be carried out within a nursing home. Therefore, transportation should be readily available for the

patient to be moved to the medical facility where diagnostic procedures can be carried out, or to a hospital if necessary.

Food Service

The dietician and the administrator responsible for the preparation and the serving of food to residents of nursing homes must be aware of the physiological and pathological changes that accompany old age. The decline in ability to taste and to smell are directly relevant to the dietary service. In addition, the normal changes of aging require better lighting in order to adequately see certain objects. The loss of teeth often makes it necessary for the dietician to make foods attractive and distinctive without having them appear as a pureed, undifferentiated mass.

The weak and unsteady hands of many elderly persons make it embarrassing to attempt to cut food or to properly prepare it, such as the buttering of bread and biscuits. Assistance in the preparation of food must be done in an unobtrusive, helpful manner that is not embarrassing to the patient. The plates must be deep, and some nursing homes prefer to use compartment plates. Cups and glasses must be of adequate size, but not heavy. The silverware, too, must be efficient but lightweight. The process of eating is often a social event, and therefore it is essential that the persons can sit comfortably, eat at a reasonable pace, and have an opportunity for

conversation after the meal. The chairs should be comfortable and the tables large enough to permit adequate distances between the diners. It is important that the consumption of food be observed so that adequate intake is assured without forcing the elderly person as some people force children to eat all that is placed before them.

There is no doubt that there is a continuing shortage of well-trained and capable individuals in these service fields. Food service is no exception, and it is unfortunate that many nursing homes are aware of deficiencies within their food services but cannot find capable personnel, even though they are willing to pay adequately. Consequently, it is often necessary for family and friends to assist whenever possible and to make certain that food intake is pleasant and adequate.

A number of investigators have found that the addition of beer and wine to the routine of a nursing home or a chronic-care unit has proved to be extremely effective toward improving patient morale. It is known that alcohol is a sedative, but the availability and the addition of beer and wine have increased conversation and social interaction. Certainly, people who have been accustomed to such beverages throughout their life should not be denied the opportunity to enjoy them in old age. Alcoholism or excessive alcohol intake can be a problem at any age, but fortunately its consumption can be carefully controlled in most nursing homes.

Activities

Visits to randomly selected nursing homes reveal that a large number of patients appear to be withdrawn, unsociable, and virtually unreachable. Purposeful mass activity has been found to be a very useful device in breaking down this wall separating the elderly person from the world.

Physical Environment

Room arrangement, a roommate, ease of the residents' movement in their rooms and to recreational areas are all of utmost importance. The nursing home should be a "home" in the true sense, offering security, comfort, and stimulation. Residents in a nursing home should participate fully in planning and carrying out social activities and have an opportunity to make suggestions regarding not only the services rendered but the appearance and structure of the environment. Lighting is of particular importance. Night lights are necessary in many locations, as elderly people find it particularly difficult to move around in the dark and cannot move from a well-lighted room to a dark room without a lengthy delay in visual accommodation. With advancing age there appears to be a rather capricious intolerance to changes in temperature. It is important that the temperature of the building be held as constant as possible so that the variation in how an elderly person responds to the temperature can be individualized and handled by the addition of

wraps or the reduction in the number of clothes. The floor of a nursing home should be level, avoiding even small steps. For example, bathroom floors should not be raised requiring an older person to step up or down. Handrails for assistance should be adjacent to commodes and bathtubs.

Nursing-Home Care Versus Hospitalization

In the 1970s, the proportion of older persons in mental hospitals has increased steadily. At any given time, at least one of three beds in a public mental hospital is occupied by a person 65 years or older. Approximately one-third to one-half of the persons in the 65 or older age group in public mental hospitals are admitted at an earlier age. However, the remaining one-half or more were admitted at age 65 or older. Eighty-three percent of first-admission older patients are diagnosed as having senile brain disease and/or arteriosclerotic brain damage. The reliability of these clinical diagnoses has been questioned and has been under study for many years. The coexistence of senile and arteriosclerotic brain disease is not unusual and is discussed in Chapter 4.

Nursing homes have become a major resource for the placement of aged patients from state mental hospitals. Questions have been raised as to whether these homes are appropriate for this type of patient. Investigators at the Boston State Hospital conducted a one-year controlled study of sixteen

nursing homes housing approximately 14,000 patients. They found institutional deprivation—physical, intellectual, or spiritual—to be a common problem. Deprivation in nursing homes was found to be particularly related to: (1) lack of stimulation; (2) lack of adequate walking space inside and outside the homes; (3) lack of recreational and occupational therapy; (4) lack of space for group socialization and activities; (5) lack of a common dining room forcing patients to eat from trays in their rooms; (6) absence of volunteer workers from the community; (7) separation of patients on different floors, reducing the possibility of interaction; and (8) minimal socialization between male and female patients. This study indicated that regressive behavior can be the result of deprivation rather than organic changes. Regressive behavior is manifested by withdrawal, seclusiveness, uncooperativeness, incontinence, refusal to eat, loss of interest in personal hygiene, loss of ability to perform self-care functions, and grossly inappropriate social behavior. Some investigators believe that the nursing supervisor is the key staff member in a nursing home. The type of person, selected by the administrator and owner to be the nursing supervisor, is of great importance. At least three types of nursing supervisors can be identified. The *permissive* supervisor leads to an indifferent staff and anxious patients. The *dominant* supervisor, although running a home that is a model of efficiency and neatness, lowers the self-esteem of the staff and is likely to disregard patients' emotional needs. A *staff-centered* supervisor who shares

control of responsibility and planning with the staff is much more likely to contribute to the effectiveness of the home program. A nursing supervisor who has produced the best climate for the patient is desirable, but may not be appreciated because some people prefer to have cleanliness and neatness take priority over meeting emotional needs.

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