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The purposes of this study were to identify, analyze and compare various Oregon meal programs for the elderly. Twenty-one separate meal programs were identified throughout the state by contacting state, county, and local groups concerned with the elderly. A survey was made by questionnaire to obtain basic information about each program. Analysis of data from the 21 completed questionnaires revealed that programs were located in Oregon communities of all sizes throughout 14 of the 36 counties. Over one-half were located in the populous Willamette Valley region. Many of the programs had developed recently with only five being in operation more than two years at the time of the survey. Programs were started and supported with the help of the churches, schools, community and local, state or federal government. Goals of the programs most often mentioned included providing low cost or nutritious meals, or social contact. The number of participants per day ranged from very few (six) to a

great many (1300). Few eligibility restrictions were put on those who wished to attend with most programs specifying only age as a criterion. These participants were located by advertising, other senior citizens, churches, public agencies, as well as other sources. Outreach was used rarely. Meals were typically prepared on-site for the participant at school and church sites. Several programs utilized a central kitchen or contracted meals. In most instances participants contributed a nominal sum for meals. Volunteer help from churches, community and clubs were used extensively in Oregon meal programs. Paid personnel were few; many programs hired only a cook. Most programs served a cafeteria style noon meal five times per week. Menus for these meals, which were planned by school personnel, program chairmen, cooks, nutritionists or others, were analyzed for nutritive content. Six of the programs fell below standard in more than two categories when compared to one-third recommended dietary allowances for men; only three were below standard in more than two categories for women.

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OREGON MEAL PROGRAMS FOR THE ELDERLY

I. INTRODUCTION

Mrs. Carpenter sits quietly looking out the window of her home. She has long since ceased to notice the peeling paint and overgrown yard. When her husband was alive, he attended to the details of maintaining the home, but Mr. Carpenter has been dead nearly seven years. Mrs. Carpenter has neither the money nor the energy for upkeep. She sighs and looks at the old clock on the mantle. It's nearly meal time, but there's little in the kitchen to eat and her arthritis makes it painful to get up to prepare what there is. Turning back toward the window, she decides she'll have a cup of tea and a piece of toast later.

Mrs. Carpenter is one of the 20 million Americans over 65. This group, which comprises 10% of the population, has long been neglected because America is a youth-oriented society with emphasis on the young (44). For example, much advertising is designed to make the consumer feel young, act young or look young. At age 65 many working citizens are forced to retire in order to make room for the youth entering the job market. In colleges and universities, programs in child development are firmly established, while many have limited offerings related to gerontology.

In the past 10 years, however, there has been increased interest in the elderly. The Federal Government, through the Older American's Act of 1965, created the Administration on Aging to deal specifically with the problems related to the elderly. Most states now have agencies concerned with the needs of the aged. On the community level, senior citizen groups and councils on aging are developing rapidly. Perhaps the most valid reason for the heightened interest in this field is the greater numbers and proportion of elderly. From 1900 to 1970 there was a six-fold increase in the number of older Americans, which was nearly double that of the general population (3). The U. S. Bureau of the Census predicts that the proportion of elderly in the overall population will increase from 9.6 percent in 1970 to 11.1 percent by the year 2000 (38). If the birth rate continues to decline as it has since 1958, the proportion may be greater than predicted (3). In addition, with allout efforts being made to eliminate heart disease, cerebrovascular disease and cancer, the three major causes of death in the elderly, the United States may see an elderly population explosion.

Concern about the place of the elderly in the population led to the 1971 White House Conference on Aging entitled, "Toward a National Policy of Aging" (53). In preparation for the national conference, preliminary sessions were held at local, state and regional levels. One of the issues to emerge was deep concern about nutrition for the

elderly. At the national conference, nutrition was selected as one of fourteen subject matter sections dealing with the needs of the elderly (11).

Two years previous, in 1969, the White House Conference on Food, Nutrition and Health incorporated a Panel on Aging into its own structure. In the report from this panel, it was emphasized that the crisis among the aged demanded immediate action to relieve hunger and malnutrition, and priority standing was given to the provision of adequate nutrition for the aged (47).

Across the nation responsive individuals and groups are reflecting the concern for good nutrition for the elderly that was illustrated in these two White House conferences. Two approaches being utilized to provide adequate nutrition for the elderly are home-delivered meals and congregate meal programs.

Another name for a home-delivered meal program is "Meals on Wheels." Meals are delivered on a regular basis, usually at low cost, to the home of the recipient. For the elderly person who is home bound because of illness or injury, or for other reasons unable to prepare his own meal, this service is greatly needed. Often it may help maintain independence and prevent institutionalization, a solution the elderly may dread. In addition to providing nutritious meals, Meals on Wheels may offer the home bound person contact with the outside world when the person who delivers the meal can take a few extra

minutes to talk with the participant. For the home bound elderly this may be the brightest spot in his day. Young mothers who are volunteer drivers sometimes take their children on the route and provide a real treat for an elderly person. Also, by having this personal contact on a routine basis illness, injury or other problems may be detected, thus maximizing the possibility of quickly discovering the older person who needs medical help or has even died alone in his home.

The congregate meal program, in which meals are served in a group setting, is another solution to the nutrition problems of the elderly. Since many people enjoy eating with others, and in fact may have little interest in eating by themselves, this program adds the parameter of a social setting. It not only gives an opportunity to socialize, but provides new interests and gives a reason to get out and a place to go. By making contacts that continue outside the meal setting, the senior citizen may be encouraged to participate in new leisure activities. A congregate setting also may provide supportive services such as social security, medical and welfare information, and nutrition education.

Need for Study

Although home-delivered and congregate meal programs are only beginning in Oregon, many people in the state are concerned about the elderly and are enthusiastic in the development of programs.

The interest in the elderly in Oregon is reflected in the establishment of a Center for Gerontology at the University of Oregon. This Center has developed an inter-disciplinary curriculum to help those interested in working with the elderly. Courses are offered at the University of Oregon, Oregon State University and Portland State University. Students wishing an emphasis in Gerontology take a 15 credit core curriculum of approved courses.

While participating in gerontology courses at Oregon State University and through subsequent contact with Oregon meal programs, it became clear that few program directors or agencies, if any, are aware of the total effort being made in Oregon to help the elderly nutritionally. Because of the diversity of sponsorship, no known agency has even a listing of existing meal programs. From conversations with gerontologists on the local, state and even national level, there appears to be a real need to compile basic facts about on-going meal programs and to make this information available to whomever could benefit from it.

Purposes and Objectives of the Study

The purposes of this study, therefore, are to identify, analyze and compare various meal programs for the elderly in Oregon. The objectives are:

1. To obtain information related to the administration of meal

programs, the operation of food service, and availability of supportive services.

2. To determine the degree of uniformity and extent of variability among programs.
3. To analyze the nutritional value of menus used in the meal programs.
4. To provide information for those interested in improving or developing similar programs.

It is hoped that sharing basic information from this exploratory, descriptive study will aid in development and improvement of meal programs.

II. REVIEW OF LITERATURE

Good nutrition is as important to the elderly as to the child. The child needs good nutrition to grow and develop; the elderly person needs good nutrition to help maintain health and vitality. However, recent findings suggest that eight million of the twenty million Americans over 65 consume inadequate diets for optimum health (16). In fact, the elderly have been termed the most uniformly malnourished group in America. Although called the "forgotten Americans," the elderly are a rapidly growing minority. Twenty million people cannot be ignored (40).

This review will discuss some of the causes of poor nutrition among the elderly and some of the actions being taken to alleviate this condition.

Although no conclusive evidence has shown that older individuals have special nutritional needs (35), it seems likely that changing economic, psychological, cultural, physiological and pathological factors may affect nutritional status.

Poverty is most likely the number one enemy of the aged. Although income position has improved over the past 15 years, 60 percent of older couples receive less than \$3500 annually. Eighty-five percent receive less than \$2500. The aged, those over 65, make up 10 percent of the population, but 20 percent of the poor. An old

person is twice as likely to be poor as younger persons (33).

In Oregon, with a population of 226,799 persons over 65, one out of every two elderly households (those containing more than one person) receives under \$3000 per year income. Elderly individuals fare no better, with a median income of a bare \$1951. The median income level for both elderly family units and individuals is less than half of those under 65. Income for Oregon elderly, when compared to national figures, is lower than average (28).

Many of these people who received adequate incomes before retirement or death of a spouse may cling to food habits acquired during more affluent years. It takes a wise shopper to purchase a nutritious diet on a minimal income because meat, fruits and vegetables may be expensive (44). Diet quality and income have been found to be related. In one study 52 percent of two-person households with less than \$2000 per year income had diets containing less than two-thirds of the recommended dietary allowances (17). Unfortunately many inexpensive foods contain little but carbohydrate, which fills the stomach but has minimal nutritive value.

A limited income also affects nutritional status by altering shopping habits. It prevents stocking up when items are on sale. If transportation cannot be afforded, according to one study, the elderly person will walk only about three blocks to shop (40). The corner grocery store may offer poorer quality food at higher prices than a

supermarket. Only a few markets offer telephone-order deliveries, although middle class retirees frequently receive dairy products from route salesmen (40). Because of the expense and difficulty of shopping and preparing meals, cheap spontaneous snacking may replace nutritional meals. However, this practice may actually be more costly than a meal routine (48).

Psychological, as well as economic factors are known to affect the nutritional status of older people. Psychological stress may affect nutrition by influencing the actual intake of food as well as the utilization of ingested food (51). This stress is often caused by the losses of roles that people face as they age. The man retires, relinquishing his role as breadwinner. The woman, whose role has been wife and mother, may be confronted with the death of her husband in addition to the departure of her children.

Another cause of psychological stress is the changing personal appearance. Physical changes caused by aging are not comfortably accepted by many since society focuses on youthfulness. Some elderly reject the fact that they are aging and don't identify with others of their own age (6). Stresses which may be produced by these and other losses and the frequent isolation, loneliness and feeling of unworthiness which may accompany these losses reduce motivation and capacity to provide for nutritional needs (22).

Cultural habits may lead the elderly to adhere to diets

inappropriate for their age. An optimal diet for one stage in life may be inadequate or even harmful at another (1). For example, as one gets older his basal rate of energy expenditure becomes less, thus requiring fewer calories for him to maintain weight. With less exercise, which usually accompanies aging, caloric requirements are further reduced (37). In the United States an average person gains 10 pounds per decade because his needs decrease while his habitual intake remains the same (54). Another example of cultural influence on diet is the story of an elderly lady who reverted in her later years to eating nothing but boiled potatoes and buttermilk, the two foods she had eaten while growing up in Europe some 70 years earlier. Since food habits are accumulations of lifetime experiences, elderly people usually prefer foods which are familiar and they find it difficult to experiment with new dishes, even though the food may be more nutritious (43).

Physiological changes, concurrent with aging, may affect ingestion of food. Losses of sight, taste and smell may render food unattractive, monotonous and uninspiring (17). Loss of teeth, an affliction estimated to include 50 percent of those over 65 years, as well as poorly fitting dentures, may lead to the use of a soft diet of mashed potatoes and bread which is high in carbohydrate but low in protein and other essential nutrients (34). Crisp, raw vegetables which are more difficult to chew may be avoided (2).

Pathological factors may have the greatest influence on nutritional status. Characteristic of the aging process is eventual loss of efficiency of homeostatic mechanisms. The progressive loss of functional cells and replacement by malfunctional connective tissue may facilitate the onset of diseases such as atherosclerosis, cancer, arthritis, and diabetes. These are commonly called degenerative diseases because of the relationship to age (6). In man, pathological factors are so common that an unmodified aging process is unknown (8).

Disease will affect nutrition in numerous ways. For example, illness will affect appetite as well as the utilization of ingested food. Self-imposed dietary restrictions may lead to malnutrition such as in the case of the ulcer victim who eliminates acid foods from his diet and eventually becomes vitamin C deficient. Dietary restrictions, whether self-imposed or prescribed by a physician, may become a financial hardship. Some drugs taken to control disease may depress appetite, cause nausea, irritate stomach lining or decrease absorption (17).

Because degenerative chronic disease is progressive, the elderly, in their quest for nutritional panaceas, are prime targets for food faddists (49). A survey of elderly in Rochester, New York, showed over one-third of the reporting households used multivitamin-mineral supplements, but few contained iron or calcium, two minerals

that are likely to be missing from the diet. Over one-half already had adequate diets and had no need for the preparations while one-fourth of the people who had poor diets were taking the wrong supplement, thus replacing none of the vitamins and minerals the normal diet lacked. If money is spent for unnecessary nutritional "cures," there are even fewer dollars available for the nutritious food that is needed.

D. M. Watkin, Co-chairman of the nutrition section of the White House Conference on Aging, states:

It behooves all of us working in nutrition and gerontology to discourage by every means at our command, efforts by food faddists, charlatans, deliberate swindlers, and even ethical profit-seeking enterprises to promote nutritional products or regimes as panaceas for the problem of old age (50, p. 157).

As the nutritional plight of the senior American becomes recognized, movements arise to combat this situation. Communities, churches, commercial enterprises, schools and government have all been involved. Community and church sponsored Meals on Wheels programs represent one of the first types of meal programs designed primarily for the aged. The concept began during World War II in London when many aged were left without means of preparing meals for themselves. Today, financed by the British government, over a million meals per year are home-delivered to the elderly just in London alone (46).

Other countries including the United States have followed London's example. One of the first known programs began in

Philadelphia in 1954. Today, community Meals on Wheels projects exist in all parts of the country. Baltimore developed a home-delivered meal service which has grown to be one of the largest in the nation. Two meals per day, five days per week are prepared at nine sites, each sponsored by a social agency, church or volunteer organization. The only paid person in each kitchen is a part-time cook. Fifteen hundred volunteers, 40 percent of them over 65 years of age, package and deliver the meals. Recipients are instructed and assisted in stocking supplies for simple breakfasts, weekends and emergencies. Clients who are able pay \$10 per week (4). As home care increases in a population with an expanding group of aged citizens, the old-fashioned good neighbor may reappear in the form of a well organized Meals on Wheels program.

Commercial enterprises are also participating in meal programs for the elderly. Many restaurants, such as the King's Table in Corvallis, Oregon, offer special rates to senior citizens. Fosters and Mannings in San Francisco began serving a special nutritious meal to the elderly for \$1.00 in 1969. Others have joined since it has been found to be profitable. Some serve only during non-rush hours and some require Medicare identification. Others have no restrictions (32).

School programs have broadened to include senior citizens in some districts. Each program is usually administered at the local

level. Many feel that the mixing of the elderly with school children is profitable to both. However, menus may need to be adjusted since the aged don't consume pizza, spaghetti and hot dogs as avidly as children (10).

The expansion of nutritional services is helping to take a burden off overcrowded institutions. Meal programs enable some patients to leave hospitals early and prevent some from going to a health care facility (9, 18). One elderly woman called a medical-social worker to say she had just had a fire in her kitchen. Her problem was poor vision caused by cataracts and glaucoma and so she had not been able to see the gas flame burner. Instead of sending her to a nursing home, she was enrolled in a meal program (13).

The Federal Government is taking an active role in reducing malnutrition in the elderly by means of food stamp, commodity, and nutrition programs. Two million elderly participate in the federal food stamp program, and now receive benefits of \$343.5 million compared to \$45.8 million in 1969 (15). This program is designed to stretch the food dollar by enabling low income families to purchase food coupons at a rate below their redeemable value at participating grocery stores. New regulations permit eligible senior citizens to pay approved non-profit vendors with food stamps when meals are delivered to their homes (12).

It is estimated that over a million elderly who are eligible do not participate in the food stamp program. Leaflets were mailed with the August 1972 social security checks urging persons who thought they might be eligible to contact state or local welfare offices. This outreach effort, called Project FIND (Friendless, Isolated, Needy, Disabled), also encouraged persons knowing someone who might be eligible to contact the proper authorities (26). Many older people who are eligible for such programs do not participate because of pride or fear that in accepting food assistance they may be subject to arbitrary treatment, or simply because they are not aware of the opportunity (23).

United States Department of Agriculture food distribution programs are available in about one-third of the counties in the United States for people with incomes below standard (23). Excess food commodities, such as bulgar wheat, corn meal, butter and canned goods, are distributed from centers without charge to eligible low-income citizens. Eligible older Americans may be able to have their food home-delivered through local "Drive to Serve" programs sponsored by the Red Cross (7). Some drawbacks to the commodity programs are that some of the foods do not appeal to the aged, some aged do not possess the knowledge to prepare the foods, and some do not have storage facilities to keep food which is usually delivered only once a month (8).

In addition to food stamp and commodity benefits, the government through the Administration on Aging has introduced federally funded meal programs for the aged. Under Title III of the Older Americans Act, which authorizes grants for state and community programs on aging, 160 nutrition programs have been funded (57). According to the Oregon State Office on Aging, three such programs are presently in existence in Oregon: Loaves and Fishes in Portland, Loaves and Fishes in Medford, and the Lane County Nutrition Program in Eugene.

Under Title IV of the Older Americans Act, which provides for research and development projects, nutrition was singled out as a priority area. In 1968 Congress appropriated \$2,000,000 for the establishment of three-year national demonstration and research nutrition programs. This pilot demonstration program was recommended to Congress because of the

. . . lack of any systematic data about the nutrition needs of older people and what was actually entailed in the planning and delivery of food, nutrition and other services, their costs, their effectiveness, and how such services could be related to the delivery of other services for older people (5, p. 6).

The primary purpose of these demonstration projects was to find suitable approaches to the delivery of food services, which makes it possible for the elderly to receive nutritious meals in a setting favorable to both eating and social interaction.

All projects were designed to include five basic elements: the provision of meals in group settings or on a home-delivered basis; nutrition education and information; systematic evaluation; provision of supportive services, and outreach services. Research was directed at examining the effect of loneliness and isolation on food habits, the impact of nutrition education programs, and ways in which elderly are influenced by their involvement as volunteers in the nutrition program. Programs were also designed to collect data on various methods of motivating the aged to improve their eating habits. Of the 32 demonstration and research projects that were funded, 23 were conducted on a local level. The projects ranged from large inner city area to rural settings, representing most races and ethnic groups in the United States (30).

In connection with the first element, meal provision, most projects concentrated on serving to groups. Group meals were held in senior citizen centers, community centers, homes for the aged, public housing, churches, and schools. The sites chosen were close to the senior population or were made accessible through transportation for these Title IV projects.

No matter how good the overall program, how accessible the location or how convenient the transportation, it was found that there must be outreach to the older American, who is almost "deliberately inconspicuous" (31). The participants that a program attracts may in

fact not be those in the greatest need of such a service: those who are socially isolated. Making a person aware of the existence of the program helps, but may not be enough. These elderly people with nothing to do and nothing to look forward to need special inducement and persuasion to participate in any activity (30). In some cases home-delivered meals were used to acquaint the person with the program. After this initial contact he was then persuaded to join the group activities. Elderly participants already in the program, with knowledge of the community and its inhabitants, sometimes proved effective in recruitment (48).

Although education was an important aspect of the demonstration programs under Title IV, it was found that getting proper information to older Americans was more difficult than getting the proper food to them. Some elderly persons were found to have reduced motivation to learn those facts and behavior patterns which health and welfare professionals consider to be in their best interest (16). Food habits are so culture bound that a radical change in dietary and consumption patterns of older people probably can't be accomplished. However, modification of established patterns may be possible if the right methods are found. Traditional methods of giving out factual information, such as threatening illness and early mortality or promising improvement in appearance and vigor, will not change food habits developed over a lifetime (40). In order to motivate the elderly to

adopt beneficial food patterns, education methods must be based on realities of life situations, such as the amount of financial resources, lifelong food habits, physical condition, degree of dependence on others, housing arrangements, availability of equipment for food storage and preparation and accessibility to the market (30). No doubt there is a great need for innovative teaching techniques.

Since nutritional problems are often related to social and health needs, nutritional programs were found to be an ideal way of introducing and providing other community services for the elderly. Information concerning recreational activities for leisure time, volunteer opportunities and health services can readily be incorporated into a meal program. Besides promoting better health among the older segment of our population through improved nutrition, these programs are a means of promoting greater opportunity for social contact, ending the isolation of old age, increasing the participants' knowledge of nutrition and health in general, and promoting independence while facilitating delivery of other services (39).

The research and development grants of Title IV have demonstrated the effectiveness of, and need for, permanent nationwide programs to provide the nutritional and social needs of older Americans unable to overcome the complex and interdependent problems of inadequate diets (39). A new Title VII of the amended Older Americans Act has been designed to help implement such a permanent program.

The bill is designed to provide grants primarily for the establishment of low-cost meal projects, nutrition training and education, and opportunities for social contacts (5). On March 22, 1972, when President Nixon signed this bill into law, he said, "The time has come for marshalling all our resources in a comprehensive campaign to meet the nutritional needs of older people" (25, p. 4). The legislation authorized \$100 million in fiscal year 1973 and \$150 million in fiscal year 1974. After some difficulty, an appropriation bill for the funding was finally approved in July, 1973 (27).

Several features from the experiences and results of the Title IV demonstration nutrition program are incorporated into the new legislation. The same five program elements as used in Title IV will be provided in Title VII: group meals, nutrition education, supportive services, outreach, and evaluation. Also, as in Title IV, Title VII emphasizes the employment of the elderly, the provision of home-delivered meals to the home-bound elderly, and the importance of convenient sites for the location of nutrition projects. Other provisions from Title IV include the providing of transportation and the stipulation that meals provide one-third of the Recommended Dietary Allowance (52).

The major differences between Title IV and Title VII are administrative. Approval of Title VII funding will come through the state office designated by the Governor of each state. In most cases

this will be the same agency that administers the Title III monies. In Oregon, the State Office on Aging has been designated to handle both Title III and Title VII grants. In Title IV, grants were awarded directly from the federal level (52).

Grants will be made to public or private non-profit agencies to serve a daily hot meal, at least five days per week. Some of the requirements of the grantee include the provision of a site, preference given to low income and minority seniors, provision of special menus to meet health, religious and ethnic needs, and a major outreach program. Also to be provided are information, referral services, counselling, consumer education, opportunities for recreation and volunteer services to others. The new law also emphasizes the participation of older people in the planning of the program (5, 21).

Problems of undernutrition and malnutrition cannot be solved independently of related problems of limited income, limited knowledge of nutrition, feelings of loneliness, rejection and apathy, declining health and vigor, and loss of mobility. Recent emphasis and public concern with hunger and malnutrition in America's elderly led to concrete steps to alleviate some of the problems. Some of the approaches to these nutritional problems of the elderly include home delivered meals and congregate meal programs sponsored by communities, churches, restaurants, schools as well as the federal

government who, through the Older Americans Act of 1965 and its subsequent amendments, also provides funds for nutrition programs for the elderly.

III. PROCEDURE

Meal programs for the elderly as defined in this study are those in which meals are prepared for senior citizens at least once per week, nine months or more per year. Meals may be served in a congregate setting, delivered to homes, or be a combination of both. This eliminates such events as potlucks, sack lunch affairs, box socials, and meals served to the elderly only on special occasions such as Thanksgiving and Christmas.

The first step was to identify the existing meal programs for the elderly in Oregon. The State Office on Aging in Salem and the Oregon Center for Gerontology in Eugene were contacted because both deal with the needs of the elderly. Neither, however, could provide a complete list of programs. It was then decided to survey the 36 counties to determine the number of meal programs for the elderly which were on-going in each local area. County extension agents, who are often aware of local happenings, were contacted first. They suggested further contacts such as Councils on Aging, Senior Citizen Clubs and Welfare Departments. Often the location of a meal program for the elderly was as exciting as a treasure hunt. One clue led to another and another until the program was finally identified. In some cases it would take numerous telephone calls even after confirmation of the program to identify the locate the coordinator of the program.

Throughout the study 15 sites were visited in order to personally observe the preparation and service of the meals, as well as to talk with the coordinators, personnel, and especially the participants. When possible, meals were eaten with the elderly.

Although much information about each program could have been gathered by talking with the coordinators of the programs, it was decided that a questionnaire would be a valuable tool to aid in gathering information. By using a questionnaire, similar information would be submitted by each program, thus giving a consistent basis for comparison. Also a written questionnaire would give the respondent time to consider each question at his convenience. In addition there seemed less chance of misrecording information in a written questionnaire than in a phone interview. Personal interviews were not used because of the travel distance between programs.

Design of the Questionnaire

The questionnaire was developed to obtain information related to the administration and operation of the various meal programs. The questionnaire was designed to collect information about the size of the program, the financial support of the program, the length of operation and the site of the program. Other questions related to program goals, criteria for selecting participants and meal cost to participants as well as actual food cost. Further questions dealt with

the preparation and service of the food. Each respondent was asked to include a copy of one week's menus from his program with the completed questionnaire.

The questionnaire was limited to two pages because these busy part-time volunteer coordinators have many other functions to perform. Questions were selected on the basis of those best able to determine the basic overall scope of each program. A sample questionnaire is included in Appendix III.

The questionnaire was pilot tested by personal interview with coordinators of two programs. The programs were chosen because of their differences in administrative structure, food service and length of time of existence. The two coordinators were asked to complete the questionnaire and add comments that they felt would be helpful.

On the basis of these interviews, the questionnaire was revised. The term "nutrition program" which had been used originally was changed to "meal program" because of the interpretation of the former to mean a lecture concerning nutrition. Question 7, which dealt with information about volunteers, was rearranged for clarity. A third part was added to question 8 to establish the total number of participants as well as the average attendance per meal and range of number of participants per meal. A question concerning the location of participants was added as part b of number 9. Since the program

directors that were interviewed knew the actual food cost, in addition to the cost for the participant, this question was added as number 11b. One question was condensed to ask about food choices in one part rather than two. Because both coordinators who were interviewed gave interesting accounts of the beginning of their programs, an additional question was added asking how the program got started.

A cover letter dated April 21, 1973 briefly explained the study to the meal program coordinators (Appendix III). Most had previously been contacted by telephone when confirming the programs and all that were contacted had indicated a willingness to participate. A self-addressed, stamped envelope was included with the cover letter and questionnaire and sent to coordinators of meal programs that had been identified by the telephone survey. Respondents were requested to return the questionnaire by May 11, 1973. Those failing to respond by May 14, 1973 and those neglecting to complete each item in the questionnaire were contacted by telephone.

Each program was assigned a code when the questionnaire was received (see Appendix I). Responses to each discrete question were tabulated; answers to each open-ended question were listed and categorized where possible. The data from the Oregon meal programs were then analyzed and compared to other meal programs in the state.

In addition to completing the questionnaire, each respondent was asked to submit one week's menus from his program. This was

requested in order to determine the nutritional value of the meals being offered. Since menus of varying numbers of days were submitted from the programs, it was decided to analyze only the first three from each program to insure a uniform sample size. When necessary, cooks from the programs were contacted to estimate the portion sizes usually served to the senior citizens.

Menus were computer analyzed for nutritive content including calories, protein, fat, carbohydrate, calcium, iron, vitamin A value, thiamin, riboflavin, niacin and ascorbic acid. Each of these nutrient values was averaged for the three-day period in each program and compared to the Recommended Dietary Allowances of the National Research Council. Menus from the various programs were also compared to the Title VII nutritional requirements. A computer program already available, based on data from Home and Garden Bulletin #72 (42), was used.

Copies of the study were given to those who participated, senior citizen groups, councils on aging, the Center for Gerontology and the State Office on Aging. Copies are also available upon request.

IV. FINDINGS AND DISCUSSION

Identification

Twenty-one separate meal programs for the elderly in the state of Oregon were identified. The map (Figure 1, p. 29) shows the locations of the Oregon programs and a listing of these programs is found in Appendix I. Data were obtained from the questionnaires returned by respondents from identified programs. For ease of identification, a code was assigned to each (see Appendix I for designation).

Responses to the survey showed that meal programs were located in all sizes of communities (Table 1). Communities were not always defined by the respondent as the town in which the programs existed, but rather by the area served. For example, the Salem Area Seniors program defined the size of the community as the membership of the senior citizen club which sponsored the program, which is under 2,500. The Lincoln County School District, on the other hand, sponsored six meal sites throughout the county, and so marked the county population as the size of the community served by its program. The Gresham Senior Adult Center marked "over 50,000" because, they explained, no boundary limits were put on the area served.

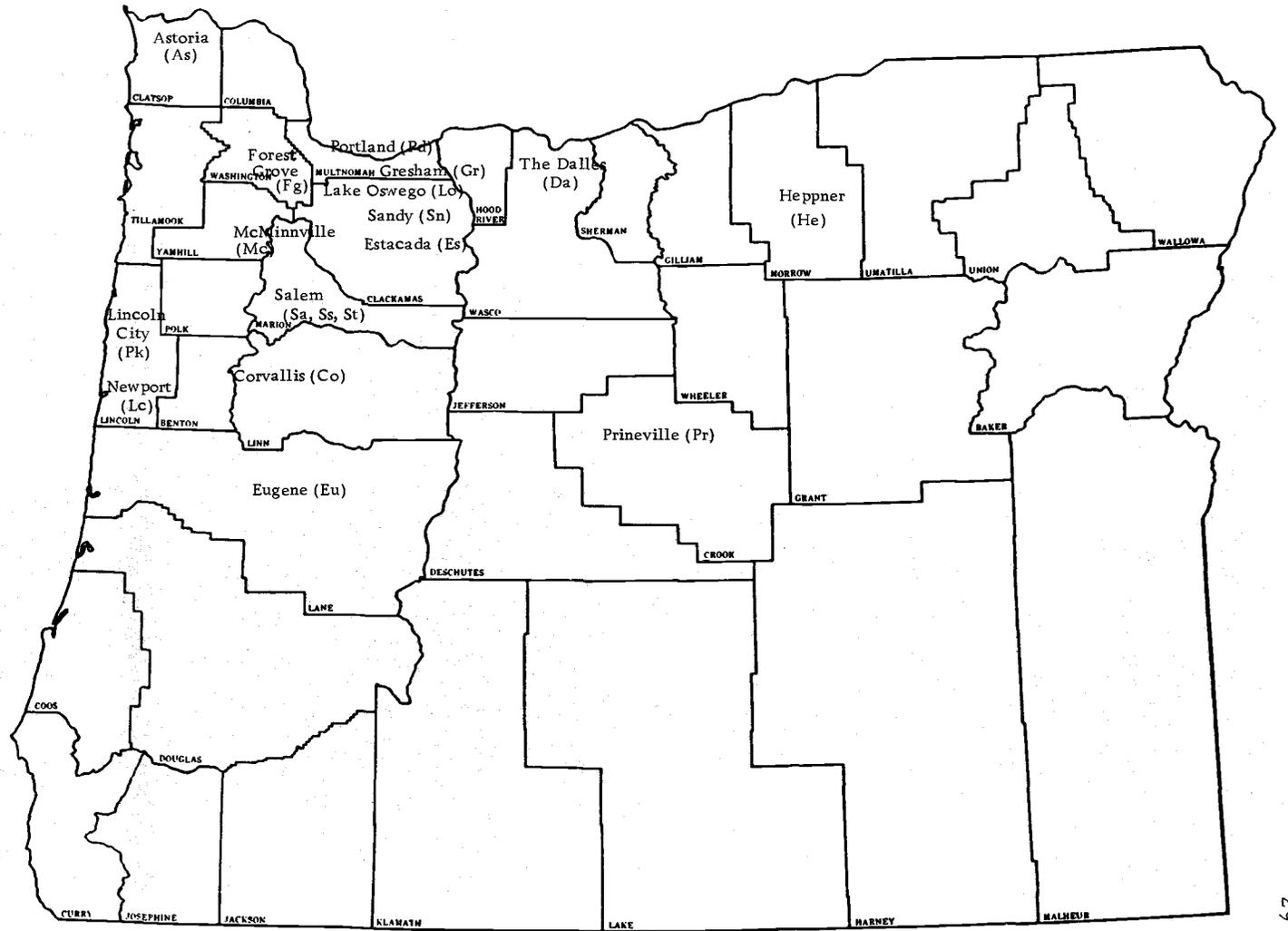


Figure 1. Geographic location of Oregon meal programs for the elderly.

Table 1. Size of community served by meal program.

Population	Number of Responses	Program Code
Under 2,500	3	He, Sa, Sn
Under 10,000	6	As, Bu, Es, Fg, Pk, Pr
Under 25,000	4	Ah, Da, Lo, Mc
Under 50,000	3	Co, Lc, Md
Over 50,000	5	Eu, Gr, Pd, Ss, St

Dispersion

It is interesting to note the dispersion of the 21 Oregon meal programs (see Figure 1). Of the 36 counties in Oregon, 14 or 38.9 percent offered meal programs for the elderly, and six of these counties were served by more than one program. Oregon residents over 65 comprise 10.8 percent of the total state population. County resident populations ranged from 6.35 percent elderly in Jefferson County to 16.08 percent in Lincoln County (28). One reason that Lincoln County has a high percentage of elderly is perhaps due to the desirability of this north coastal area for retirement living. This county, with the highest proportion of elderly residents in the state, had two meal programs with a total of seven sites throughout the county. Another north coastal county, Clatsop, also had a high proportion of county residents that were elderly (14.32 percent), probably

for the same reason as Lincoln County. The program in Astoria served some of this population.

Four of the Oregon programs were located east of the Cascade Mountains. Although only 13 percent of the total Oregon elderly live in the 18 counties of central and eastern Oregon, the populations of many of these counties contain a high percentage of elderly. It has been suggested that this trend results from the emigration of young people from the area, thus leaving a higher proportion of elderly (28). Twelve of the programs were located in the populous Willamette Valley area from Lane County north to Multnomah County. The nine counties in this area account for 67.9 percent of the total elderly in the state. Multnomah County, in which Portland is located, has 31.1 percent of Oregon's elderly. It is in this county where two of the largest programs were based; Portland Loaves and Fishes with 26 sites and Gresham Senior Adult Center. Marion County, second only to Multnomah County in total number of elderly, contains 8.2 percent. Three programs were on-going in this county at the time of the survey. Lane County, with the third largest total Oregon elderly population, 7.8 percent, was served by the Lane County Nutrition for the Elderly program which was concentrated primarily in Eugene and Springfield, but had plans to expand to other parts of the county. Two programs were located in the southern part of the state, both in Jackson County which contains 5 percent of the total Oregon elderly

and a higher than average county resident proportion of 11.86 percent elderly (28).

Development

With the creation of the Administration on Aging in 1965 and subsequent reports on nutrition and aging, many socially minded people in Oregon have become aware of the nutritional needs of the elderly. This new awareness may have been responsible for the development of many of the meal programs for the elderly, since most programs have been developed since May 1972. Five more were started the previous year with five continuing programs starting before May 1971 (see Table 2).

Table 2. Length of time program has been in operation.

Length of Time in Operation as of May 1973	Number of Responses	Program Code
Less than 3 months	1	Bu
3 months - 1 year	10	As, Co, Da, Eu, Fg, He, Lo, Pk, Sa, Sn
1-2 years	5	Lc, Mc, Md, Pr, Ss
More than 2 years	5	Ah, Es, Gr, Pd, St

Interesting responses were generated by a question which asked how each meal program got started. Many Oregon programs have emerged because the local people saw a need to help the elderly with

meals. Much of this impetus may have been a result of the findings of the White House Conferences dealing with the problems of nutrition and the elderly. Some may have become aware of this need through reading or hearing accounts of programs in other parts of the country, especially with the surge of nutrition programs resulting from AoA Title IV funding.

Respondents for Corvallis School Lunches for the Elderly, the Lincoln County School District, and the Sandy Golden Age Group indicated that local senior citizen groups had approached the school district to ask that meals for seniors be provided in the schools. In Estacada, the elementary school principal and superintendent themselves initiated the senior meal program in the school. The Harney County Senior Citizen meal program was begun when the high school home economics department wanted to give their students an opportunity to prepare meals for a group and asked the senior citizens to participate.

A number of programs were started through efforts of churches or ministers. Six in Oregon were started this way including programs in Lake Oswego, Astoria, Prineville, McMinnville, Salem and Portland. The Ashland Meals on Wheels program was organized by a VISTA worker and the Gresham program used OEO funds to begin. The respondent for the Pixie Kitchen in Lincoln City started his program after President Nixon first vetoed monies for the AoA Title VII

program in the fall of 1972. Other respondents stated that their programs were started because of need, interest or concern for the elderly.

Goals

When questioned about the primary goals of their programs, four respondents listed "offering meals" to the elderly, while 15 mentioned "providing nutritious meals" or "balanced diets." Providing social contact during the meal was also indicated as a primary goal by 15 respondents. Serving the low income elderly or providing a low cost meal was a primary goal of seven. The goal of two programs was to reduce isolation among the elderly. Other primary goals listed were: to include home delivered meals, to serve as many as possible, to give the high school home economics department an added program, to improve health, to meet nutritional restrictions, to make available agency services and to serve those unable to provide for themselves.

Since the question about goals was open-ended, it is difficult to estimate how answers might have differed if respondents had been given choices to check. Eleven mentioned both goals of good nutrition and providing social contact for the meal. Five gave nutrition and low cost to the participant as combination goals. Only two of the 21 respondents listed all three primary goals of serving nutritious meals

Table 3. Primary goals of programs.

Goal	Number of Responses	Program Code
To provide nutritious meal	15	Ah, Co, Da, Es, Eu, Fg, Gr, He, Lo, Mc, Md, Pd, Sa, Sn, St
To provide social contact	15	As, Eu, Fg, Gr, He, Lc, Lo, Mc, Md, Pd, Pk, Sa, Sn, Ss, St
To provide low cost meal	7	Ah, Bu, Co, Eu, Fg, Pk, Sn
To offer meal	4	Bu, Lc, Pk, Ss
Other	7	As, Bu, Eu, Fg, Lo, Pd, Pr

at low cost with social contact. Every program in Oregon except one, however, stated one of these three basic ideas as one of its goals. It is interesting to note that the goals of providing good nutrition or social contact were mentioned twice as often as providing low cost meals. Perhaps low cost to the participant was taken for granted by some since meal cost to the participant was minimal in most cases.

Participants

The number of participants in the meal programs surveyed varied widely. The average attendance per day ranged from 6 to 1300. Of the 21 reported programs, 9 indicated that 25 participants or fewer were considered average daily attendance. Nine of the programs averaged from 26 to 90. Three programs, all with multiple sites, had

much larger attendance with two indicating an average of about 350 and one (Portland Loaves and Fishes) reporting 1300 persons.

After analyzing the responses returned on Question 8c which asked for the total number of participants, it was evident that respondents encountered considerable difficulty in interpreting the question or in supplying the information. Programs that had been in existence for over two years, for example, would have a hard time going back over past records to count all the participants that had ever attended the program. Therefore, responses to this question (Question 8c) are not included in the findings reported in Table 4.

Several criteria, including age, income and residency, were used in selection of participants for meal programs (Table 5). Criteria as described by the respondents, were quite non-specific. Minimum age ranged from 50 to 62 years with four indicating "elderly" and two making no age restriction. Lincoln County School District and Salem Community Schools, the two exceptions, allowed all adults to attend their lunch programs, but especially encouraged the elderly to participate.

Only eight programs reported using other criteria in addition to age, and these were very generalized. Two respondents listed income as a criterion for selecting participants. The Lincoln City Pixie Kitchen participants must "be on social security." The respondent for the Ashland Meals on Wheels Program checked income on the

Table 4. Program daily attendance.

Program	No. of Sites	No. of Days per week in operation	Average Daily Attendance	Range
Portland	25	3 (per site)	1300	15-115 (per site)
Eugene	5	4-5 (per site)	375	360-390
Medford	4	2 (per site)	300	20-160 (per site)
Gresham	1	4	90	75-100
McMinnville	1	3	75	42-100
The Dalles	1	5	57	no data
Salem Area Seniors	1	1	56	40-70
Lincoln City	1	5	55	20-70
Lake Oswego	1	2	46	12-90
Forest Grove	1	4	41	24-160
Salem Community Schools	6	5	40	no data
Salem Senior Townhouse	1	5	30	no data
Ashland	1	5	25	no data
Lincoln County	6	1	25	10-35
Heppner	1	1	24	12-35
Corvallis	2	5	20	1-40
Estacada	1	5	16	3-52
Astoria	1	3	15	6-30
Prinville	1	5	12	12-14
Sandy	1	5	7	1-15
Burns	1	5	6	1-15

Table 5. Criteria for selecting meal program participants.

Criteria	Number of Responses	Program Code
Age: 50	1	Lo
55	8	Bu, Co, Es, Gr, He, Pd, Sa, St
60	5	Da, Eu, Hs, Md, Pr
62	1	Pk
elderly	4	Ah, Fg, Mc, Sn
Income	2	Ah, Pk
Residency	5	Ah, Da, Eu, Lo, Pk
Other	7	Ah, Da, Eu, He, Lo, Pr, St
None	2	Lc, Ss

questionnaire but did not give specifics. Residency was a requirement listed by five respondents. Definitions of this requirement were vague with respondents specifying such things as "the surrounding area," "low income neighborhoods," "the county and area," and "a twenty mile scope." Other criteria indicated a preference for participants who were isolated, handicapped, home-bound, or unable to provide meals for themselves.

Compared to requirements for the new Title VII federal nutrition project, Oregon programs were permissive in stipulations for participation. Title VII requires that participants be 60 years of age, although their spouses may be younger, and also requires that preference be given to low income and minority elderly. Even though the income for Oregon's elderly is somewhat below the national

average (28), only two programs mentioned income as a criterion for participation. Preference to minority elderly was not listed by any probably because Oregon has few living in the state (28).

Respondents indicated that participants were located through advertising, senior citizens, churches, public agencies and community sources as well as outreach (see Table 6). Ten of the 21 respondents advertised their program through newspapers, radio, grocery store publicity, and television. Four respondents indicated that participants were located through senior citizens or through the senior citizen program, including the senior center newsletter. Three also mentioned locating participants through the help of churches. Public agencies such as the community health department, welfare department, home health care and the food stamp center were used to locate participants by four programs. Several means for locating participants were grouped under the category of community sources. These included adult community centers, word of mouth, community referrals, telephone calls, nursing homes, hospitals, and neighborhood centers. Eight indicated the use of these sources in locating participants for their meal programs. Outreach, a specific effort to search for, inform and encourage participation from those in greatest need, was listed by three respondents.

Table 6. Methods of locating program participants.

Method	Number of Responses	Program Code
Advertising	10	As, Da, Es, Co, Lo, Md, Pd, Pk, Sa, St
Seniors	4	Bu, Co, Es, Gr
Churches	3	Lo, Md, Pd
Agencies	4	Da, Eu, Pd, Pr
Community	8	As, Da, Eu, He, Lo, Md, Pr, Sn
Outreach	3	Da, Eu, Lo

The elderly Oregonians most in need of a meal program may not be receiving this service. In previous studies it has been found that a large number of potential recipients do not seek these services and the people most in need may be the most difficult to enroll in a program (17). Publicity, as used by the majority of Oregon programs, may attract those least in need of the services offered (5).

Outreach became a major part of the Title IV nutrition programs and is a requirement of the new Title VII program. However, only three programs in Oregon included in this study reported using outreach to locate participants. Lake Oswego was "in the beginning stages" and The Dalles used "limited outreach." The Lane County Nutrition program used nutrition aides for outreach. The reason more programs do not use this approach may be evident from the following excerpt from the Denver Title IV nutrition project report (45).

The older American presents difficulties in outreach simply not found in other populations. He ordinarily pays his bills on time and lives within his means so that he does not appear very often in the bankruptcy courts; he obeys the law and is seldom found in criminal courts. Since he does not usually attend schools, there are no teachers or social workers present to spot a problem. He does not ordinarily march in the street, protesting his low pension, inadequate housing or poor transportation. He gradually drops away from his social clubs and churches, and frequently his own church members are not aware that he is in need. The average older American stays within his own small circle of acquaintances and activities, calling no particular attention to his needs, until he becomes ill enough to be hospitalized. In short, he is almost deliberately inconspicuous.

In other words, outreach may be difficult with the older American because he can become isolated from the community and thereby unknown.

Meal Site

To a question concerning the site of the meal, three respondents indicated a community building; nine programs used a church; and nine used a school as a meal site. One program offered meals in a restaurant. Three programs specified using housing authority buildings, parks and recreation facilities and senior centers. Two of the programs surveyed served home-delivered meals exclusively with the meal site being the participants' homes. The findings are summarized in Table 7.

Table 7. Program meal site.

Meal Site	Number of Responses	Program Code
Community building	3	Eu, Pd, Sa
Church	9	Da, Eu, Fg, Lo, Mc, Md, Pd, Pr, St
School	9	As, Bu, Co, Eu, Es, He, Lc, Sm, Ss
Restaurant	1	Pk
Other	5	Ah, Eu, Gr, Pd, Pr

Meal sites used in the Oregon programs were similar to the most commonly used sites in the Title IV pilot projects. Churches and schools were most popular in Oregon with all but five using one of these as a meal site. Churches often have kitchen and dining facilities large enough to accommodate a meal program. Since churches are non profit, charitable organizations, only a nominal rental fee may be charged to pay for utilities. Ministers and church organizations responsible for starting meal programs for the elderly may choose the church as the meal site, as was the case with Salem Townhouse, Lake Oswego, and the McMinnville Pioneer Pantry. A disadvantage of using a church is that the kitchen and other facilities must be shared with others.

Schools, through decisions on the local level, may allow the elderly to eat on the premises, either with the children or at some other time. Although the situation appears to be "ready-made," the

community may still need to expend effort to encourage or help older people attend this type of program. Some elderly people may initially feel like outsiders in a school program. Others may wish to attend but lack transportation. Still others do not wish to be exposed to the noise and hustle of a school operation. An additional disadvantage to using school food service is that most do not operate during the summer months. The Astoria program solved this by recruiting a restaurant to carry on the program during the summer, but the cost to participants was much higher. The Salt Lake City Title IV demonstration project found that two main advantages to using the public schools were to be able to use existing facilities, and to have the program operate during daylight hours. Disadvantages they found included the design of the school which was for youth activities, and interruptions in the meal activities caused by bells, fire drills, and school announcements (5). It seems that simply making a school program available may not always be the answer to the needs of the elderly person.

Average attendance for the seven programs in Oregon that used the school food service exclusively all ranked below tenth. Considering that three of these programs were in communities over 25,000 and had 2, 4 and 6 meal sites respectively, the average attendance seems low as the following table illustrates.

Table 8. Average elderly attendance at school sites.

Program and Code	Number of Sites	Average Daily Attendance	Rank among Surveyed Programs
Salem (Ss)	6	40	11
Lincoln County (Lc)	4	25	14
Heppner (He)	1	24	15
Corvallis (Co)	2	20	16
Estacada (Es)	1	16	17
Astoria (As)	1	15	18
Sandy (Sn)	1	7	20
Burns (Bu)	1	6	21

Churches and schools may be the most common meal sites in Oregon because of the predominantly rural nature of the state. Nationally it has been found that small communities have more trouble finding suitable sites than do metropolitan areas (5). The Loaves and Fishes program in metropolitan Portland, for example, was able to use community centers and public housing facilities while smaller communities usually do not have these facilities that are adaptable to a meal program. A senior center, as used in Gresham, may adapt well to a meal program in large or small communities.

Preparation Site

Food for the meal programs was prepared in schools, churches, community buildings, restaurants, homes for the aged, and central project kitchens. Seventeen of the 21 respondents indicated that they utilized on-site preparation for at least one of their meal sites. Of

these, school kitchens were used by seven programs while one used the school home economics facilities. On-site church kitchens were used by another seven programs, and other community buildings were used by one of the programs with multiple sites. A restaurant kitchen was the on-site preparation area for one program. It is evident that in Oregon most programs (76 percent) prepare the food on site. Perhaps this is because most programs are small community projects with few participants. In most cases only a small area is required for the food service.

In six programs the food was prepared away from the meal site. The Lane County Nutrition Program, with multiple sites, had meals catered from both a college and a restaurant. Two other programs were exclusively Meals on Wheels; for one the food was prepared at a church, the other contracted meals from a college. The Salem Area Seniors purchased prepared food from a nearby grade school to serve at the senior center. This had the advantage of allowing the senior citizens to eat their meal at the senior center where programs and activities were held while the program coordinator did not need to worry about food buying, preparation or storage. Gresham contracted for food with the county home for the aged. Portland Loaves and Fishes utilized a central kitchen for a number of its sites. Moreover, some sites in the Portland program prepared for other sites, thus using a satellite approach.

Table 9. Food preparation site for meal programs.

Site	Number of Responses	Program Code
On-site		
School	8	As, Bu, Co, Fs, He, Lc, Sn, Ss
Church	8	Da, Eu, Fg, Lo, Mc, Md, Pd, St
Restaurant	1	Pk
Community building	2	Eu, Pd
Central project kitchen	2	Pd, Pr
Catered		
From restaurant	1	Eu
From school	3	Ah, Eu, Sa
From home for the aged	1	Gr

Financial Support

Financial support for the meal programs, other than through participant donations, came from a variety of sources (Table 10). Support from community and from church were each marked by nine respondents. School financial support was indicated by eight while six credited the federal government. Six respondents also showed that financial support came from clubs, individuals, organizations, or city and county governments.

In no case was the Federal Government the sole financial support for a program. The government often supplements other funds, stipulating that a certain percentage of financial support must come from the local community. Of the six programs that receive

Table 10. Program financial support other than participant donations.

Source of Support	Number of Responses	Program Code
Community	9	Ah, As, Da, Fg, He, Lo, Mc, Md, Pr
Church	9	Ah, As, Da, Fg, Lo, Mc, Md, Pd, St
School	8	Bu, Co, Es, He, Lc, Sa, Sn, Ss
Federal government	6	Ah, Eu, Gr, He, Md, Pd
Other	6	As, Eu, Gr, Md, Pd, Pk

federal financial support, three were funded by AoA Title III monies and had applied for Title VII funds. Both Title III and Title VII require financial support in addition to the federal contribution. Communities or churches were seldom reported as the only source of support with just one respondent marking "community" and only one marking "church" as sole support.

Schools, on the contrary, frequently were indicated as the only source of support. Although schools do not actually donate money to the program, they may provide the meals for the elderly participant at a small cost. Since in most cases there is no difference between the amount the school charges and the amount that the participant pays, there may be no cost to the program itself. Therefore, no other financial support is needed. School meal costs are small

because they are state supported, non-profit institutions. Food costs per person may also be low because of the large volume already involved in feeding the children and because of the less expensive abundant foods to which the schools are entitled.

One program in Oregon, The Golden Rule for Golden Age, indicated no financial support other than the 60 cent participant donation given for the buffet at the Pixie Kitchen Restaurant in Lincoln City. Since the cost of the meal was estimated to be more, the owner of the restaurant who sponsored the program was carrying the extra cost.

Financial support from participants, in the form of the meal cost, appeared very reasonable (see Table 11). In no instance was a noon meal over 75 cents and many of the respondents indicated that individuals were not obligated to pay the listed rate, but could pay whatever they could afford. These costs are very similar to the meal costs reported for the AoA Title IV projects, charges to the participants ranged from 10 cents to \$1.25 (5).

Table 11. Meal cost to participant.

Meal Cost	Number of Responses	Program Code
None	1	He
"Pay as you can"	4	Fg, Lo, Md, Pd
30¢ - 40¢	2	Es, St
50¢ - 60¢	11	Bu, Co, Eu, Gr, Lc, Mc, Pk, Pr, Sa, Sn, Ss
75¢	2	As, Da
\$1.25	1	Ah

Food Cost

The food cost figures asked for in this study may have been difficult for the respondents to calculate in some cases. Some reported that the figures were not current and some included labor with the food cost. The reported food costs from the study ranged from 30 cents per person per meal for one program to \$1.30 reported by another program. Perhaps this wide range was due at least partly to the items included when computing the cost rather than to real variation between programs. The average raw food cost per meal reported from the National Title IV nutritional projects ranged from 35 cents to 61 cents. Because many Oregon respondents indicated they could not give actual raw food cost the data generated by this question will not be reported further.

There could be many reasons for differences in food costs, such as cost of the many items, the amount of donated foods, and waste in production, service or storage of food (43). Large programs may be able to buy in greater bulk, thus getting wholesale rates on food purchases. On the other hand, smaller programs may be better able to get food donated from local merchants or local clubs, thus reducing food costs. For example, some local Oregon creameries donated ice cream to the programs. Waste in production, service and storage could be a problem for several reasons. It may be difficult to judge

how many participants will come on a particular day. When preparing for a large group, variations of five or ten orders do not matter as much as when preparing for a small group. Furthermore, the staff of volunteers, who may be different from day to day, might unknowingly be wasteful of food because they are not sufficiently familiar with the food service. Storage of food may be a problem if facilities are shared, as in the case of a church or community building. Also, perishable goods may be more difficult to use up if the meal program does not operate five days per week. Another reason for differences in food cost between programs may be the efficiency in planning. The staff at The Dalles program, for example, had taken precautions to plan menus for Fridays to include only items that could be frozen so that any left-overs could be kept for the next week.

Personnel

Respondents were asked to list the positions, duties, and hours of the personnel who worked for their program. They were also asked to indicate whether the person was paid or volunteer. Response to this open-ended question was poor with many programs listing only basic positions without including duties or hours per week. Therefore, the discussion will include only general findings.

The number of paid personnel was small in most of the Oregon programs. Ten of the 21 programs reported no paid personnel at all.

Since nine were school food service programs, the paid school personnel were not considered part of the elderly meal program. The tenth program, Prineville Meals on Wheels, utilized all volunteer help including the chairman, cooks and drivers. Five of the remaining 11 programs paid only the cook and used volunteers for the other duties. The Gresham program paid a coordinator, but otherwise used volunteer help. Prepared food was contracted through a county home for the aged, which donated labor, charging only raw food cost. The Dalles Meals on Wheels program was the only non-federally funded program in the state that employed a paid director as well as a cook. This was made possible by a Golden Eagle Grant through the Eagle Fraternal Organization in addition to local donations. Title III programs (Portland, Eugene and Medford) hired 35, 15, and 6 persons, respectively. These multi-site operations were much larger than the others in Oregon with high daily attendances (see Table 4).

Most programs included a coordinator and/or hostess, cook, and volunteers to help with the preparation, service and clean-up of the meal. Programs with home-delivered meals needed drivers as well. Six programs also stated that they used drivers to transport participants to and from the meal site. Lake Oswego had a steering committee with positions such as secretaries, typists, purchasers and publicity volunteers. The Prineville respondent indicated a director in charge of publicity. The Salem Senior Townhouse had

officers including president, secretary and treasurer. The three Title III recipients had more complex organizations because the programs were much larger.

In most cases the cook managed the service of the meal probably because most programs were small with few paid personnel. In a number of programs the cook was the only paid individual and the only person who was consistently present for every meal. The project coordinator was in charge in five cases. A project food service manager was used by two programs and in two others a contract food service manager was employed. Three respondents indicated that others managed the service of the food, including site managers, a restaurant manager, and a nutrition aide.

Table 12. Person in charge of service of food.

Position	Number of Responses	Program Code
Contract manager	2	Ah, Eu
Project manager	2	Bu, Pd
Project coordinator	5	Da, Fg, Gr, Pr, Sa
Cook	11	As, Co, Eu, Fg, Es, Lc, Mc, Md, Pd, Su, St
Other	3	Eu, He, Pk

One way by which programs hold down costs and involve the community is to use volunteer help. The Buffalo, New York Title IV project report said that volunteers seem to be especially attracted to meal programs for the elderly even though there is a high demand for

volunteers by other organizations (5). Churches are often tapped as a source of volunteer help perhaps because of the service-oriented organizations that already exist in the church structure. In the cases where churches have initiated the program, it is likely that they will also provide volunteer workers. Some Oregon meal programs involved all churches in the area that were willing to participate. Each week a different church group would be responsible for providing the volunteers. In this way the coordinator of the program needed only to contact the church and notify them of their turn. By spreading the volunteer work, many people in the community are able to become involved with the elderly. Churches are a common source of volunteer help in the country as a whole. For example, Cincinnati reported that church organizations were the best source of volunteers for their meal program (5). Some Oregon programs have used the weekly rotation system successfully with other organizations, such as Women's Clubs, in addition to church groups.

Senior citizens themselves may also volunteer their services. Seniors who resent baby-sitting type of volunteer work might welcome the opportunity to help their own age group. Some senior centers, such as the Corvallis Senior Center and the Salem Area Seniors, took the initiative to start meal programs. Those working at the center may volunteer to take reservations for meals or help transport other seniors to and from meal sites. Six of the Oregon programs

made specific mention of seniors doing volunteer work. Only one respondent (Eugene) noted that participants themselves served as volunteers. This would appear to be a good source for help if the participant was willing and able to assist.

Students were named by a few programs as a source of volunteers. If students become involved, they may spread their enthusiasm and concern for the elderly while still in school as well as later to other parts of the country and to other areas in their work.

The following table shows the sources used to obtain volunteer help for Oregon programs.

Table 13. Sources of volunteer help.

Sources	Number of Responses	Program Code
Churches	7	Ah, Da, Gr, Lo, Mc, Pd, St
Community	4	As, He, Md, Pr
Senior center	4	Co, Gr, Lc, Sa
Clubs	3	Da, Gr, Pd
Interested citizens	2	Lo, Pd
Women's organizations	1	Lo
Participants	1	Eu
RSVP	1	Eu
USO	1	Eu
Public schools	1	Eu
Universities	1	Eu
Sororities	1	Da

The total number of volunteers used by each program ranged from zero in the case of the Pixie Kitchen in Lincoln City to

approximately 1,500 used at the 22 sites of the Loaves and Fishes Program in the Portland area (Table 14). It may have been difficult for respondents to indicate the total number of volunteers that the program had used. Many, for example, do not keep records because of weekly rotations from one volunteer group to another. Volunteers may work only a few hours per month, or even less, thus making record keeping complicated and time consuming. The question might better have asked for the total number of volunteers at the present time rather than the total used.

Table 14. Estimated number of volunteers used by programs.

Number of Volunteers	Number of Responses	Program Code
0-9	6	Es, He, Lc, Pk, Sn, Ss
10-19	3	Bu, Co, Sa
20-49	3	As, Fg, Pr
50-99	5	Da, Eu, Gr, Mc, Md
100-200	3	Ah, Lo, St
1500	1	Pd

Supportive Services

Many Oregon programs offered supportive services in addition to the meal. These included nutrition education, home-delivered meals, social programs and health-related services as well as other services (see Table 15).

Table 15. Supportive services.

Type of Service	Number of Responses	Program Code
Nutrition education	8	Da, Es, Eu, Fg, Gr, Lo, Mc, Pd
Home-delivered meals	11	Ah, Da, Eu, Fg, Gr, He, Mc, Md, Pd, Pr, St
Social programs	11	Es, Eu, Fg, Gr, He, Le, Lo, Mc, Md, Pd, Ss
Health-related services	8	Es, Eu, Gr, Lo, Mc, Md, Pd, Ss
Other	8	Es, Eu, Lo, Mc, Md, Pd, Sa, St
None	5	As, Bu, Co, Pk, Sn

Nutrition education was listed by eight respondents. All of these had stated that a major goal of their program was to offer nutritious meals or good nutrition. Teaching nutrition could help the participant to improve his diet for the majority of meals that he eats on his own. However, it has been pointed out by Holmes (14) and Leong (19) that nutrition education programs may be very difficult to present in a meaningful way to the elderly. As any good teacher knows, the subject matter must be fitted to the audience. No wonder one person who was trying to teach nutrition was a dismal failure with the elderly when she recommended everyone drink milk to build strong teeth, not realizing that over half the group she was talking to had dentures. The nutrition education services provided by Oregon programs included presentations by nutritionists, dietitians and

extension agents; assistance with shopping; nutrition counseling, contests and visual aids such as film and pamphlets.

Home-delivered meals were provided by 11 or 52 percent of the programs with one more (Lake Oswego) planning to begin delivery. The number of home-delivered meals ranged from approximately 12 per day at Prineville and Heppner to 350 per day from Portland Loaves and Fishes. All of the programs which served meals in churches also included a Meals on Wheels program while this was not a service offered as part of any of the programs that utilized the school food service program. The Heppner Neighborhood Center Nutrition Program, the only one in the survey to use public school facilities other than at lunch time, did serve home-delivered meals. In order to encourage the elderly to socialize the Title VII regulations recommend that not more than 10 percent of the meals funded by this federal program should be home-delivered. However, more present programs in Oregon far exceed this guideline. A comparison of average site attendance with average number of home-delivered meals per day is shown in the following table (Table 16).

Social activities were offered by 12 programs. These included sing-a-longs, special music, programs put on by schools and churches, movies, painting classes, sewing projects, table games, field trips and tours. Health-related services were offered by eight programs. The services listed included education, talks, counseling and referrals.

Table 16. Proportion of home-delivered meals.

Program	Average No. Served at Meal Site	Average No. of Home-delivered Meals	Total No. of Meals	Percent of Home-delivered Meals
Gresham	90	6	96	6
McMinnville	75	7	82	9
Eugene	375	45	420	11
Portland	1300	350	1650	21
Forest Grove	40	15	55	27
Heppner	25	11	36	31
The Dalles	57	32	87	36
Medford	300	280	580	48
Salem	30	40	70	57
Prineville	0	12	12	100
Ashland	0	25	25	100

Nine respondents listed other supportive services which provided legal and tax advice, educational programs, political programs, referral services and transportation. In the programs surveyed there is a great variation in the degree to which supportive services are offered, from none (five programs) to all five suggested on the questionnaire (four programs).

Time of Service

All of the surveyed programs except three served during the noon hour. There may be several reasons for this. The schools, of course, serve their main meal at noon. Other sites, such as churches and community buildings may be in use during the evening. It may be more difficult to find personnel willing to work during an

evening meal time. The elderly may prefer going out during the middle of the day, especially on rainy dark winter days. If the elderly person is having only one main meal a day it may be more beneficial to have this meal at noon in order to give him energy for afternoon activities.

The Pixie Kitchen restaurant was one site that served after the noon hour--a buffet meal from 2:30-4:30. This is a slow time for restaurant business and also allows flexibility for the elderly. If the participant chooses to have an early lunch at home he could come at 4:30 for his dinner. If he chose to have a late breakfast, he could come at 2:30 for his lunch.

The Heppner Neighborhood Center Nutrition Program served its meal at 4:30, using a school facility but preparing its own food. With this choice it would not be possible to use the school until their personnel had left work. When the program first started, meals were served later, but the time was set earlier at the request of the participants. Ashland Meals on Wheels delivered an evening meal, but of course the elderly did not need to worry about being out at night since the meals were delivered to their homes.

Style of Service

Cafeteria style was the most popular type of service in the Oregon programs. Eleven respondents indicated this type of service

for at least one of their sites. Three programs used buffet style; three used plate service; and three used family style where bowls of food were passed at the table. The two programs which were exclusively Meals on Wheels naturally delivered the meal to the home of the participant. Cafeteria style service may have been used because the setup was already in existence as was the case for six of the programs which used school sites. Cafeteria style allows the program to have control over portion sizes, as when plates are served, but takes less time and fewer personnel as compared to plate service. Although it is possible that some elderly might have trouble carrying a tray through a cafeteria line, these individuals could probably arrange to be served at the table or have a volunteer carry the tray. Sometimes, as in the case of one of the Lane County sites, there simply was not enough room for a cafeteria line so plates were served to the participants. Loaves and Fishes used plate service exclusively, explaining that they feel this creates a home-like atmosphere for the elderly. Family style may be used for the same reason. However, problems can occur if, for example, Mrs. Jones takes the last of the cherries in the fruit salad before it is passed to Mr. Smith, whose favorite food happens to be cherries. Gresham participants commented on their program, which sometimes used family style and sometimes used plate service. Some said they preferred that the whole meal be served at once, rather than waiting for bowls to be

passed. On the other hand, those served last did not like the wait. The following table illustrates the style of food service used by Oregon programs.

Table 17. Style of food service.

Style	Number of Responses	Program Code
Cafeteria	11	Co, Es, Eu, He, Lo, Lc, Mc, Md, Sn, Ss, St
Plate service	4	Da, Eu, Gr, Pd
Buffet	3	Bu, Eu, Pk
Family Style	3	As, Fg, Gr
Home-delivered	2	Ah, Pr

Menu

Many programs offered a set menu with no choice except beverage. A choice of salad was offered by five; three offered choice of main dish; two offered choice of bread; five offered choice of dessert, and five mentioned choice of vegetables and fruits.

Table 18. Food choices.

Menu Item	Number of Choices	Program Code
Salad	2-5	As, Bu, Eu, Lo
(buffet)	27	Pk
Main dish	2	Bu, Eu
(buffet)	9	Pk
Bread	2	Es, Gr
Dessert	2	Bu, Da, Es, Eu, Fg
Vegetable & fruit	2	Bu, Eu, Gr, He, Md

The position of the person planning the menus varied from program to program as can be seen in Table 19. In nine instances, where meals were prepared by the school, the school personnel also planned the menus for the senior citizens. In three programs, the chairman of the program planned the menus while in one case the chairman and public health nutritionist together planned the menus. In another case the chairman, who is a registered dietitian, and the cook planned the menus. Pioneer Pantry in McMinnville utilized the cook and home extension agent for this job. In two programs the cook alone planned the menu. Two programs employed a registered dietitian and one used a nutrition aide. Meals for Gresham, which came from the county home for the aged, were planned by a consulting dietitian.

Table 19. Person who plans menus.

Position	Number of Responses	Program Code
School personnel	9	Ah, As, Bu, Co, Es, Lc, Sa, Sn, Ss
Chairman	3	Da, Pk, Pr
Cook	2	Md, St
Cook + chairman	1	Lo
Cook + extension agent	1	Mc
Chairman + public health nutritionist	1	Fg
Dietitian	3	Eu, Gr, Pd
Nutrition aide	1	He

Nutritive Value of Meals

Menus submitted by respondents were analyzed for nutritive content. Two programs were not included because of the nature of their menus. One served a buffet with a wide variety of choices. Another was not included because volunteer cooks each day prepared whatever they wished within an established menu pattern and records of menu serves were not kept. The results from this analysis are found in Table 20. Each program is listed randomly and is not identified. The three menus from each program that were used for the analysis are found in Appendix IV. As a standard for comparison, the Recommended Daily Dietary Allowances (RDA) for both men and women over 55 years of age are listed at the beginning of Table 20. One-third of the RDA is given because the averages are for one meal a day only.

Basically, there are two problems with calories; either too many or too few. Ten of the 19 menus analyzed proved lower than 800 calories, the one-third RDA for men over 55 years of age. However, only one program showed a calorie value below the RDA for women. This program may have been low, in part, because of the simple menu pattern and small portions served. It must be remembered that caloric requirements vary from person to person, as well as varying from day to day for each person. Some of the people, especially

Table 20. Average nutritive value of each program meal.

Program	Calories	Protein g	Calcium mg	Iron mg	Vit. A IU	Thiamin mg	Ribo. mg	Niacin Equiv. mg	Vit. C mg
M - RDA 1/3	800	22	267	3.34	1667	0.40	0.57	4.67	20
W - RDA 1/3	567	18	267	3.34	1667	0.34	0.50	4.34	18
1	738	28	344	2.70	1027	0.39	0.66	11.54	12
2	971	41	507	5.17	7809	0.39	0.84	15.93	55
3	824	35	337	5.30	3024	0.67	0.85	11.66	61
5	791	42	462	4.69	4296	0.32	0.90	14.27	20
6	899	47	386	4.60	1221	0.65	0.87	18.11	24
7	928	32	377	4.08	4417	0.38	0.72	10.83	31
9	752	32	360	3.97	2451	0.53	0.74	12.73	20
10	934	39	390	5.27	1498	0.41	0.79	13.50	21
11	866	35	442	6.75	13270	0.46	1.56	14.27	33
12	760	37	448	5.33	5007	0.34	1.08	13.64	40
13	891	35	491	3.57	5007	0.34	1.08	13.63	40
14	741	35	480	4.80	5120	0.31	0.83	10.43	17
15	547	18	169	2.95	1704	0.31	0.37	7.27	15
16	686	25	189	4.00	3802	0.33	0.43	8.11	30
17	760	27	375	3.29	3483	0.34	0.67	10.40	16
18	740	23	413	3.50	4198	0.39	0.70	7.57	18
19	796	39	453	5.03	4453	0.36	0.82	14.40	52
20	929	43	471	5.00	4613	0.36	0.89	16.27	17
21	845	43	460	4.26	5956	0.30	0.82	16.24	16

women, attending the programs may not have needed more calories and others who wished may have been able to have second helpings.

Too many calories are as harmful as too few. All programs except one offered caloric levels above the one-third RDA for women and nine were above the RDA for men. Calorie requirements drop steadily after maturity for both men and women since energy is no longer needed for growth. Decreased metabolism and decreased physical activity also cause energy requirements to decline. Many Americans have a tendency to be overweight as is illustrated in a study that estimated 28 percent of the women from 69 to 69 years of age were obese (36). Health risks concurrent with aging are often associated with overweight. Extra weight on bones and joints may aggravate arthritis and make it difficult for the elderly person to be mobile. Obesity has also been connected with atherosclerosis, heart disease, diabetes, and hypertension, all of which are found most commonly in the elderly population. Although many of the calorie allowances for the Oregon programs seem high, this does not mean that each individual was consuming this amount. Calories were calculated based on the amount of the full servings as indicated by each program, but of course not every person eats all that is available. Those who do may need the extra amount if their other meals provide limited quantities of food.

The lower calorie requirements of the elderly make it more difficult to obtain adequate amounts of other nutrients since requirements for most nutrients except calories remain constant. In other words, the elderly person must eat less, but get the same amount of nutrients as a younger adult. Therefore, he must be more careful in selection of his diet to choose food rich in essential nutrients.

Analysis for protein, essential for body maintenance, showed an ample offering in all programs except one which was low only for men, but adequate for women. Many of the Oregon programs specified three ounces of meat or meat substitute at each meal which alone supplies one-third of the RDA or the total needs for one meal. If milk and grain products were served, the protein total was higher. Inadequate protein intake is likely to be found in those persons with low income, low calorie diets or poor food habits (20). The elderly may fit all three of these categories. In a study of Iowa women, it was found that those 70 years of age or older were eating less protein than those in the 30 to 39 year old range. The proportion of women in the older age group with less than 50 grams of protein in their daily diets was twice as high as that in the younger group (20). Since it is possible that the elderly do not get two-thirds of their daily protein requirement in meals away from the program, it is well that protein offerings were high in program meals.

The RDA for calcium is the same for both men and women and does not change after maturity. Participants in all Oregon programs except two were offered ample amounts of calcium. The two exceptions did not serve milk, an excellent source of calcium. Respondents for some programs commented that milk was not a popular beverage with the participants. Because of this one program discontinued serving milk on a routine basis, but provided it upon request. Again, it should be emphasized that offering food is not the same as the intake of that food. Other programs which offer milk might find that actual intake is low. If milk is not consumed as a beverage, perhaps other ways could be found to increase the use of this nutritious food. Cream soups, puddings, ice cream, cheese sauces, and cottage cheese salads are some of the ways that milk or milk products might be satisfactorily incorporated into the diet. Dried milk may also be added to such foods as mashed potatoes or meat loaf. The average calcium content of menu number two was found to be high. These menus included milk, ice cream and pudding along with various other good sources of calcium.

Calcium is found, in general, to be low in the diet of elderly individuals (36). In a USDA nationwide food consumption survey women over 65 averaged more than 30 percent below the RDA for calcium (29). The need for calcium is not outgrown. Even though the person may have lost his teeth, calcium is still an important mineral

in his diet. Bones are not inert substances, but actively metabolizing tissue that is in a constant equilibrium in the body. Osteoporosis, a disease that is often a manifestation of the aging process, causes a loss of bone substance, thus making the bones porous and more easily broken. Though the actual cause is not known, some suspect that low dietary intake of calcium might be related to the onset and development of this disease which affects 30 percent of the population over 65 (20).

The recommended daily allowance for the mineral iron is 10 mg, or 3.33 mg for one meal for both men and women over 55 years of age. Three Oregon programs did not meet this recommendation. A primary need for iron is to prevent nutritional anemia. Difficulty of iron absorption in the elderly or blood loss will increase the need further. Food on the menus from number 9 provide an illustration of how iron can be incorporated into the diet at reasonable cost. On the three days that were analyzed, in which iron averaged over twice the one-third RDA, the program served some foods particularly high in iron, but not particularly high in cost. Liver, an excellent source, was offered for one of the meals (although it may not have been eaten). Peas and spinach, vegetables which are high in iron, were served. Tomato juice, high in iron, was also on the menu; breads enriched with iron were also included. Iron is sometimes a difficult nutrient to incorporate into the diet and most Oregon programs have done an excellent job of including this important mineral.

Vitamin A was found to be low in three of the program menus. Abundant sources of Vitamin A are most green leafy and yellow vegetables. The programs that were low all served peas, beans or corn, none of which are particularly high sources of Vitamin A value. Perhaps on other days they used spinach, broccoli, sweet potatoes, winter squash, apricots or larger quantities of carrots and lettuce. Liver, the storage organ for Vitamin A, is an excellent source. Notice, for example, the effect of a two ounce serving of beef liver on the average Vitamin A value in menu number 9 analysis.

The B vitamins, thiamin, riboflavin and niacin, differ in the recommended dietary allowances for men and women. Requirements are related to the total calorie need because of the function these vitamins serve in energy metabolism. Thiamin was found low for men in 14 of the 19 analyzed menus, and low for women in six. Although thiamin is widely distributed it is found in relatively small amounts in food sources. One way that Oregon programs might increase thiamin is to include pork in the diet. A pork loaf was responsible for the high thiamin average in program number three. Gresham reported that when pork is announced on the menu, friends call one another to make sure no one missed that day; it was a favorite with that group. In view of low thiamin levels in older men and women (36) it appears that thiamin may not be used efficiently by the elderly, and an effort should be made to have an adequate amount in the diet. Other good

sources, besides pork, are ham, peas, mature beans, liver, oranges and whole grain or enriched cereal products.

Whole grain cereals supply a good source of these energy-related B vitamins. White flour has the outer vitamin-rich part removed. In order to correct this loss, Oregon law now requires that all flour be enriched with thiamin, riboflavin and niacin as well as the mineral iron. Since these nutrients may be low in the diet of the elderly, it is hoped that enriched flour will partly offset this deficiency.

Riboflavin amounts were adequate for men and women in all programs except the same two that were low in calcium, the two that did not serve milk. In addition to being an excellent source of calcium, milk is an excellent source of riboflavin. One-half cup serving of milk incorporated into the diet each day would put these low programs well into the acceptable range. The high riboflavin average of program number 9 is due to the two ounce serving of liver. Other good sources of riboflavin include meat, whole grain and enriched cereal products and broccoli.

Since the amino acid, tryptophan, can be converted by the body into niacin, enough protein was available in all programs to supply sufficient quantities of this niacin precursor to make up more than enough niacin to meet the recommended dietary allowance. One of the best sources of niacin, along with red meat, fish and whole grain and

enriched cereal products, is poultry. The four programs which had the highest niacin values all served chicken or turkey at one of the meals analyzed.

Most programs had a satisfactory amount of ascorbic acid. Seven proved lower than the 20 mg recommended for men and six of these also were below the 18 mg recommended for women. None were extremely low and those that were could easily be brought up to one-third RDA by serving even small amounts of citrus fruits, tomatoes, or dark green, leafy vegetables such as broccoli or spinach, perhaps with a lemon wedge. Since an orange or even one-half cup of orange juice contains the complete daily allowance of ascorbic acid, participants using oranges at breakfast or for a snack would be receiving enough. Both the number two menus, with an average of 55 mg ascorbic acid, and number three menus, with an average of 61 mg, served oranges or orange juice on two of the three days that were averaged. The number 17 menus, which averaged 52 mg, served orange juice, broccoli and spinach.

In general, Oregon programs offered nutritious meals to the elderly participants. A nutritious diet only begins with a well-planned meal. If the meal is not eaten by the participant, the nutritive value to him is zero. Programs made an effort to make meals acceptable and attractive to the participants. Lincoln County School District, which served to seniors on Thursday of each week, especially planned

meals suited to the elderly. Other programs asked participants for menu suggestions. Programs interested in increasing nutritional content of the diet, but hesitating to introduce new foods, might find that by involving the participant in the planning of the menu he will be more interested and willing to try new foods. To make the introduction of different foods more acceptable, an explanation of why it is being included, some of its history, and any other interesting information about it might be included. Starting with small servings may also help.

Interest in Results

Eighteen of the 21 respondents indicated that they would like to have a copy of the results of this survey. Most said they felt they would benefit by having this information because it would give them ideas from other programs that might help in improvement. Several said that this information would help them develop criteria for evaluating their program and one said that the information from other programs would be helpful in their expansion plans. Some were interested in being informed of existing programs and the extent of others' concern for the elderly. Several wanted the community and participants to be aware of the information from this study.

V. SUMMARY AND CONCLUSIONS

The purposes of this study were to identify, analyze and compare various Oregon meal programs for the elderly. Oregon meal programs for the elderly were identified by contacting the State Office on Aging, The Center for Gerontology, County Extension Offices in the 36 Oregon counties, and others that deal with the elderly. Questionnaires completed by coordinators or other personnel from the 21 identified programs resulted in the following data.

1. Meal programs for the elderly were found in all sizes of communities in Oregon, from under 2,500 to over 50,000 population. Programs were in 14 of the 36 counties with six counties having more than one program. Four programs were located in the sparsely populated area east of the Cascade Mountains, three were located on the Oregon Coast and two were found in southern Oregon. The remainder were in the heavily populated Willamette Valley area from Eugene to Portland.
2. Over half of the programs had been in operation less than one year at the time of the study. Five had been in operation less than two years and five had been in operation more than two years. Programs were started in various ways, often through contact with churches, schools, or senior citizens themselves.

Primary goals of most programs included a combination of providing nutritious meals, social contact, or low cost meals.

3. The number of participants varied from very few (6) to very many (1,300). Most programs had one site, with 30 participants as a median attendance figure. The only criterion consistently used for selecting the participants was age, with age 55 or age 60 most often the base. Criteria of income and residency were used by few programs. Participants were located mainly through advertising, community sources, public agencies, senior citizens and churches. Outreach was seldom used.
4. Churches and schools were the most typical meal sites for the Oregon programs, although some used community buildings, senior centers, restaurants and public housing. Food was typically prepared on site, especially in churches and schools. A central project kitchen was used for the multiple-site Portland program. Catered food was used in some cases, coming from schools, a restaurant, and home for the aged.
5. Meal programs were supported financially by participant, community, churches and school donations as well as city, county and federal government grants. The meal cost to the participant averaged about 50 cents. Many indicated that participants were not obligated to pay the suggested price. Food

costs were not reported in this study because of the lack of response to the question.

6. Paid and volunteer personnel were used in programs. Programs using school facilities usually had no program-paid personnel. Most programs paid only the cook, who usually managed the service of the meal; some also paid the director or others. The three largest programs, all federally funded, had a greater number of paid staff. Volunteers were used extensively by Oregon programs. Churches, community organizations and senior citizens were good sources of volunteer help. Although difficult for respondents to estimate, the total number of volunteers used ranged from none to 1,500. Most used under 100.
7. Supportive services were offered including nutrition education, home-delivered meals, social programs, health-related services and others. Over half the programs reported offering home-delivered meals and social programs.
8. All but three programs reported serving a noon meal. Over half of the programs served five days per week; 80 percent served at least three times per week. Cafeteria style was used by over half of the programs. Buffet, family style, plate service and home-delivered meals were used with about equal frequency by the remainder.

9. Eleven of the 21 respondents indicated menu choices in at least one of the following categories: salad, main dish, bread, dessert and vegetable or fruit. Menus were planned by school personnel, program chairmen and cooks, as well as county extension agents, a public health nutritionist, dietitians and nutrition aides.
10. Menus from 19 programs were analyzed by computer for nutritive content. Calcium and riboflavin were found to be low in the two programs that did not offer milk. Thiamin was found to be borderline in many of the menus. Iron and Vitamin A values were found low in few programs. Vitamin C was marginal in about one-third of the sets of menus. Protein and niacin were found to be well above one-third of the RDA in most cases.

The findings summarized above led to the following conclusions regarding food service programs for the elderly in Oregon and in the country as a whole.

1. There is a need in Oregon as well as the rest of the country for low cost, nutritionally sound meals to be provided for the elderly, either in a social setting or in their own homes. Many of the elderly have difficulty obtaining, preparing and consuming meals by themselves. Physically it may be impossible to walk to a grocery store and carry food home. Economically, funds

may not be available for transportation or for the purchase of nutritious food. Intellectually, the person may not know what is necessary for good health, or he may not know how to prepare food for a meal. Socially, mealtime is a time for family and friends to come together. It is natural that eating with others should remain an important part of the individual's experience throughout life, contributing to his sense of belonging (37).

However, family and friends may move away or die, leaving the elderly alone and isolated. Psychologically, there may be no desire to prepare food or to eat it alone. As a report from the President's task force on aging emphasized, it is evident that many other obstacles than simply getting food on the table stand in the way of good nutrition for the elderly (52).

2. Although many programs have recently developed in Oregon, there appears to be a need for many more in order to reach elderly Oregonians who need assistance. Community support will be needed to begin new programs as well as to help those which are already in operation to grow.
3. It appears that more needs to be done than setting up a program and waiting for the participants to come. Outreach personnel would be helpful in seeking out those elderly in greatest need and encouraging them to participate in meal programs. An

outreach program may be necessary for these personnel in order to make them more effective.

4. Menus must be carefully planned to include at least one-third of the recommended dietary allowances in all nutrients. If the program meal is the largest of the day for the elderly then it follows that it should contain more than one-third of the total amount of nutrients.

Suggestions for Future Studies

The findings of this study suggest several areas in which further research on food service programs for the elderly would be desirable. It is hoped that this study will help coordinators of Oregon meal programs to become aware of one another so that not only this basic information may be shared, but that they will be encouraged to work together in solving the many problems arising from a meal program. It is also hoped that those who are planning to start a program may benefit from this information. This study only skims the surface of the knowledge necessary in order to best serve the Oregon elderly population. Further research needs to be done in many areas.

For example, studies should be conducted in which participants are consulted to help determine what is best suited to their needs. Also, goals of the programs must be clearly defined and ways of measuring the success of those goals need to be delineated. If, for

example, a program goal was the improvement of nutritional status, then a measure of the person's status before entering the program must be made and some way found to check on his progress, to see if the program is indeed meeting its goals. Since most programs can accommodate only limited numbers of individuals, criteria need to be set up which determine those most in need.

In the area of menu analysis, additional data must be gathered on actual food intake records of participants, as well as the nutritive content of the menu. The need for nutrition education has been mentioned, but a measure of effectiveness of different educational techniques seems necessary.

People in the fields of nutrition and gerontology have the great challenge of helping senior citizens obtain optimal nutrition. President Nixon, in an address during the White House Conference on Aging, proclaimed,

Any action which enhances the dignity of older Americans enhances the dignity of all Americans, for unless the American dream comes true for the older generation, it cannot be complete for any generation (41, p. 1).

Probably no single approach to the nutritional problems of the elderly can be fully responsive; no single system for delivery of food is the total answer. However, with many Americans reaching age 65 every day, it is hopeful that additional research be carried out in order to solve the nutritive plight of those aged who are in need of such assistance.

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APPENDICES

APPENDIX I

OREGON MEAL PROGRAMS FOR THE ELDERLY

<u>Code</u>	<u>Program</u>
Ah	Meals on Wheels, Ashland
As	Senior Citizens Services of Astoria, Astoria
Bu	Harney County Senior Citizens, Burns
Co	Corvallis School Lunches for the Elderly, Corvallis
Da	Wasco County Meals on Wheels, Inc., The Dalles
Es	Estacada Senior Citizens, Estacada
Eu	Lane County Elderly Nutrition Program, Eugene
Fg	Forest Grove Senior Center, Forest Grove
Gr	Senior Adult Center, Gresham
He	Heppner Neighborhood Center Nutrition Program, Heppner
Lc	Lincoln County School District, Newport
Lo	Lake Oswego Adult Lunch Program, Lake Oswego
Mc	Pioneer Pantry, McMinnville
Md	Medford Loaves and Fishes, Medford
Pd	Loaves and Fishes, Inc., Portland
Pk	Golden Rule for the Golden Age, Lincoln City
Pr	Meals on Wheels, Prineville
Sa	Salem Area Seniors, Inc., Salem
Sn	Sandy Golden Age Group, Sandy
Ss	Salem Community Schools, Salem
St	Senior Citizen Townhouse, Salem

APPENDIX II

Department of Institution Management
School of Home Economics
Oregon State University
Corvallis, Oregon 97331

April 21, 1973

Dear

Interest in meal programs for the Oregon elderly is growing by leaps and bounds. Communities, churches, schools and others are helping to provide this much needed assistance. However, it has been found that no one agency has information on all programs. Therefore, the Department of Institution Management at Oregon State University is attempting to assemble basic information about ongoing programs in our state to share with those who may be interested. Will you please help us by filling out and returning the enclosed questionnaire relative to your own program?

We hope that distribution of this information will aid meal programs for the elderly to continue to improve and flourish. We are grateful for your cooperation. If possible, please return the questionnaire in the enclosed envelope by May 11, 1973.

Sincerely,

Dotti Pritchard
Graduate Student

Virginia Harger, Head
Institution Management Department

APPENDIX III

SURVEY OF MEAL PROGRAMS FOR THE OREGON ELDERLY

Name of Program _____ Telephone _____
 Address _____ County _____
 Name of Respondent _____ Title _____

Directions: Please check or otherwise answer every item as it applies to you. Feel free to add comments.

1. What is the size of the community served by meal program?
 _____ under 2,500 _____ under 50,000
 _____ under 10,000 _____ over 50,000
 _____ under 25,000
2. In addition to participant donations who gives financial support to your meal program?
 _____ community _____ federal govt.
 _____ church _____ other, specify
 _____ school
3. What is the meal site?
 _____ community building
 _____ church
 _____ school
 _____ restaurant
 _____ other, specify
4. How long has this program been in operation?
 _____ less than 3 months
 _____ 3 months - 1 year
 _____ 1-2 years
 _____ more than 2 years
5. How did your program get started?
6. What are the primary goals of your meal program?
- 7a. What is your source of volunteers?
- b. Please estimate the total number of volunteers that your program uses.
- c. What are the positions, duties, and hours of the personnel who work for the program? Check whether paid or voluntary.
8. How many participants do you have in your program?
 A. _____ average attendance per meal
 B. _____ range of number of participants per meal
 C. _____ total number of participants
- 9a. Check criteria which are used in selecting participants. For those checked, please give specifics.
 _____ Age _____
 _____ Income _____
 _____ Residency _____
 _____ Other _____
- b. How do you locate participants?
10. Are any of the following supportive services offered in your program? Please describe briefly.
 _____ nutrition education program
 _____ home delivered meals
 _____ social programs
 _____ health-related services
 _____ other services, specify
- 11a. What is the meal cost to the participant?
- b. What is the actual food cost?
12. Where is the food prepared?
 _____ on-site
 _____ central project kitchen
 _____ catered from restaurant
 _____ catered from school
 _____ other, specify

POSITION	DUTIES	HR/WK	PAID	VOL

13. Please indicate the days per week that each meal is served.

MEAL	M	T	W	T	F	S	S
Breakfast							
Noon							
Evening							
Special							

14. Who manages the service of the meal?

contract food service manager
 project food service manager
 project coordinator
 cook
 other, specify

15. What is the style of your service?

cafeteria (food served)
 buffet (self-service)
 family style (bowls passed at table)
 plates served to tables
 other, specify

16. What is the position and/or title of the person who plans the menus?

17. How many food choices are given in the following areas?

beverage bread
 salad dessert
 main dish other, specify

18. If possible, we would appreciate a copy of one week's menus from your program. Please enclose them with the questionnaire.

- 19a. Would you like a copy of the results of this survey? Yes No

- b. If yes, how do you think you will benefit by having this information?

THANK YOU FOR YOUR COOPERATION. PLEASE RETURN
 THE QUESTIONNAIRE AND MENUS IN THE ENCLOSED
 ENVELOPE BY MAY 11, 1973.

APPENDIX IV

MENUS SUBMITTED FOR NUTRITIVE ANALYSIS

1. Wiener Wrap Green Beans
Carrot Sticks Fruit Cup
Milk

Beef w/Gravy on Biscuit
Green Salad Sliced Pineapple
Milk

Fried Chicken Whipped Potatoes
Bread Fruit Jello w/
Topping Milk
2. Meat Loaf Mashed Potatoes
Gravy Buttered Peas and
Carrots Cole Slaw
Ice Cream Milk

Turkey Breast Gravy
Sweet Potatoes Dressing
Buttered Spinach Jellied
Cranberry-Orange Salad
Deep Dish Apple Pie Milk

Baked Fish Tartar Sauce
Browned Potatoes Harvard
Beets Waldorf Salad Orange
Juice Cherry Pudding Milk
3. Spaghetti Garlic Bread
Green Beans Cottage Cheese
Orange Apple Crisp Milk

Pork Loaf Peas and Carrots
Orange Juice Rolls
Cottage Cheese Banana
Chocolate Brownie Milk

Turkey Salad Sandwich
French Fries Cottage Cheese
Apple Peaches Lime Jello w/
Topping Milk
4. Chicken Rice Spinach
Tossed Salad Cranberry Sauce
Cottage Cheese Fruit Cocktail
Muffin Milk

Broiled Hamburger Sweet
Potato Zucchini Tossed Salad
Cottage Cheese Biscuit
Lemon Pudding Milk

Barbeque Beef Mashed
Potatoes Green Beans
Tossed Salad Cottage Cheese
Bread Fruit Cocktail Milk
5. Roast Beef Mashed Potatoes
Gravy Buttered Peas Roll
Fruit Jello Milk

Baked Chicken Au Gratin
Potatoes Green Beans
Relish Tray Cottage Cheese
Bread Milk

Roast Pork Mashed Potatoes
Gravy Buttered Corn
Tossed Salad Fruit Jello
Roll Milk
6. Wieners Mashed Potatoes
Creamed Mixed Vegetables
Peaches Bread Cookies Milk

Pineapple Juice Roast Beef
Mashed Potatoes Gravy
Buttered Carrots Tossed Salad
Bread Applesauce Milk

Fish Sticks Tartar Sauce Corn
Cole Slaw Bread Banana
Milk

7. Fried Chicken Whipped Potatoes
Gravy Cole Slaw Biscuits
Fruit Cocktail Milk

Sausage Patties Sweet Potatoes
Fruit Jello Rolls Apple-
sauce Milk

Meat Loaf Whipped Potatoes
Gravy Relish Plate Peaches
Milk
8. Meat Loaf Baked Potato Peas
Jello Salad Rolls Prunes
Cookie Milk

Chicken Noodles String Beans
Fruit Salad Rolls
Peach Crisp Milk

Swiss Steak Mashed Potatoes
Gravy String Beans
Pickled Beets Fruit Jello
Raisin Rice Pudding Milk
9. Meat Balls Rice Spinach
Corn Bread Tapioca Milk

Apple Juice Meat Loaf
Mashed Potatoes Gravy Peas
Bread Apple Crisp/Topping
Milk

Tomato Juice Liver & Onions
Baked Potato Buttered Corn
Bread Applesauce Cookies
Milk
10. Tuna Noodle Casserole
Broccoli Bread Fruit Crisp
Milk

Roast Beef Potatoes Gravy
Green Salad Bread
Stewed Prunes Cookie Milk

Sausage Tater Tots Spinach
Muffin Cottage Cheese
Jello Milk
11. Beef & Gravy Fluffy Pota-
toes Fruit Salad Rolls
Pumpkin Custard/Topping
Milk

Beef-Vegetable Soup
Cheese Sandwich Cole Slaw
Pineapple Cake Milk

Oven-Fried Chicken
French Fries Carrots
Bread Applesauce Milk
12. Beef Patties Buttered Corn
Tossed Vegetable Salad
Roll Applesauce Milk

Fish Sticks Tartar Sauce
Spinach Fruit Salad Rolls
Pumpkin Custard Milk

Beef Barbeque over Bun
Pineapple-Lime Salad
Carrot Sticks Ice Cream
Milk
13. Wiener Mashed Potatoes
Peas Corn Bread Peaches

Vegetable Beef Soup
Cornmeal Muffin
Orange Wedge
Peanut Butter Cake

Meat Loaf Buttered Corn
Lettuce-Apple Salad
Cinnamon Bread
Lemon Pudding/Topping
14. Ham Casserole Broccoli
Carrot Salad Bread
Tapioca

Meat Balls Mashed Potatoes
Gravy Green Beans Bread
Fruit Jello Cookies

Hamburger-Vegetable Soup
Biscuits/Jam Cottage
Cheese/Pineapple Cake

15. Wieners Baked Sweet Potato
Muffin Peaches Milk
Vegetable Beef Soup
Peanut Butter Sandwich
Fruit Crunch Milk
Meat Loaf Mashed Potatoes
Cole Slaw Bread Milk
16. Hamburger Gravy on Toast
Cole Slaw Bread
Peach Crisp Milk
Spaghetti French Bread
Buttered Spinach Fruit Cocktail
Milk
Chow Mein over Rice
Carrot-Pineapple Salad
Bread Chocolate Cake Milk
17. Beet Relish Turkey Meat Balls
Gravy Rice Pilaf Broccoli
Orange Cup Milk
Hamburger Patty w/Sauce
Creamed Potatoes Spinach
Fruit Jello Salad
Applesauce Torte Milk
Tuna Loaf Mushroom Sauce
Mashed Potatoes Tossed Salad
Peas/Onions Cranberry Crunch
Milk
18. Fried Chicken Mashed Potatoes
Peas Roll Pear Half
w/cheese Cake Milk
Meat Loaf Rice Gravy
Spinach French Bread
Grapefruit-Apple Salad
Ice Cream Milk
Roast Beef Baked Potato
Squash Muffin Carrot-
Raisin Salad Cake Milk
19. Fried Chicken Mashed Potatoes
Gravy Buttered Peas
and Carrots Tossed Salad
Peanut Butter Cake Milk
Roast Beef Dressing
Cauliflower w/Cheese Sauce
Carrot/Pineapple-Raisin
Salad Jello Milk
Burger Loaf Rice
Buttered Carrots Jello-
Fruit Salad Chocolate
Pudding w/Topping Milk