

FACTORS INFLUENCING FOODSERVICE COSTS  
IN ADULT CARE HOMES

by 1050 710

CARROL D. NILES

B. S., Kansas State University, 1948

---

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

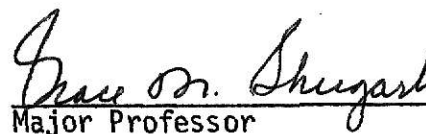
MASTER OF SCIENCE

Department of Institutional Management

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1974

Approved by:

  
Major Professor

LD  
2668  
T4  
1974  
N55  
C.2  
Document

## ACKNOWLEDGEMENTS

I wish to express my thanks to Dr. Allene Vaden, of the Department of Institutional Management, and Mrs. Grace Shugart, Head of the Department of Institutional Management, for their counsel, guidance, and direction throughout this research. Also, I would like to acknowledge the valued help and suggestions of Mr. Richard P. Brown, executive secretary of the Kansas Nursing Home Association, and Mr. Clifford E. Fischer, Administrator of Brookside Manor, during the study. Thanks also to Mrs. Merna Zeigler, Department of Institutional Management, for reviewing the manuscript and serving on the committee.

Special thanks to my husband, Irving, and my children, Frank, Nancy, and Norma, for their encouragement and interest. Karen Area, Martha Bergen, and Kris Arheart deserve recognition for their proficient technical assistance.

Lastly, appreciation is expressed to those who participated and provided information for this study.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
LIST OF TABLES . . . . .	v
INTRODUCTION . . . . .	1
REVIEW OF LITERATURE . . . . .	2
Cost Control . . . . .	2
Food Cost Control and Cost Control Systems . . . . .	2
Food Costs in Hospitals and Adult Care Homes . . . . .	4
Labor Costs, Staffing Patterns, and Productivity . . . . .	5
Supervision of Foodservices . . . . .	7
Menu Planning . . . . .	9
Meal Plan . . . . .	9
Cycle Menus . . . . .	10
Modified Diets . . . . .	11
Purchasing, Inventory, and Production Controls . . . . .	12
Policies and Procedures Related to Cost Control . . . . .	12
Sources of Supply . . . . .	13
Purchasing Responsibility . . . . .	15
Projection of Inventory Requirements . . . . .	15
Type and Quality of Food Purchased . . . . .	16
Use of Convenience Foods . . . . .	17
Storage Space . . . . .	18
Production Control . . . . .	19
METHODOLOGY . . . . .	20

RESULTS AND DISCUSSION . . . . .	23
General Information . . . . .	23
Adult Care Home Staffing Patterns . . . . .	23
Record Systems and Foodservice Costs . . . . .	26
Record Systems . . . . .	26
Foodservice Costs . . . . .	27
Meal Plan and Type of Diets . . . . .	28
Purchasing, Inventory, and Production Controls . . . . .	31
Purchasing Responsibility . . . . .	31
Sources of Supply . . . . .	32
Type and Quality of Food Purchased . . . . .	36
Inventory Control . . . . .	38
Production Control . . . . .	39
SUMMARY AND CONCLUSIONS . . . . .	41
REFERENCES . . . . .	45
APPENDIXES . . . . .	50
A. Expenses and Staffing Patterns Questionnaire . . . . .	51
B. Management Practices and Procedures Questionnaire . . . . .	54
C. Correspondence . . . . .	58
D. Responses to the Questionnaire . . . . .	61
E. Questionnaire Guide for Interviews . . . . .	63
F. Coding Categories . . . . .	65
G. Summary of Comments . . . . .	73

## LIST OF TABLES

Table	Page
1. Sizes and types of adult care homes in the study . . . . .	24
2. Number of employees in relation to size of home . . . . .	25
3. Foodservice costs by size of home . . . . .	27
4. Per patient foodservice costs by size and type of home . . . . .	29
5. Length of cycle menu . . . . .	30
6. Person responsible for purchasing food by size of home . . . . .	32
7. Size of home and extent of retail purchasing . . . . .	33
8. Frequency of wholesale purchases and purchasing responsibility . .	34
9. Sources of food supplies . . . . .	35
10. Source of canned goods, staples, and frozen foods . . . . .	35
11. Purchasing "specials" as related to the person responsible for purchasing . . . . .	37
12. Percentage of adult care homes using selected convenience food items . . . . .	38

## INTRODUCTION

Food and labor costs are the two major operating expenditures of an adult care home operation. Controlling food costs and at the same time providing attractive, nutritionally adequate meals are goals of any dietary department (1-4). Regardless of the size of operation there are certain basic management techniques related to control of foodservice costs (5). Policies and procedures for control of cost must be established for effective financial management. The objective of this project was to study foodservice costs and related management practices of adult care homes in Kansas. Of particular interest to the study was the influence of certain management policies and procedures on the financial management of the foodservice department.

Foodservice systems of adult care homes vary from home kitchen-type operations to quite sophisticated organizations. For most homes, it is a common practice to employ a local homemaker to manage the dietary department because of her reputation as a good cook. Often she has had no opportunity for special training and little thought is given to her management competencies (6-8).

Sound managerial decisions that control food costs should be made in a systematic way from well kept, meaningful records. Adequate planning must be done to meet the needs of the residents and those of the facility. Judicious purchasing procedures and efficient food production are essential for controlling food costs. These aspects of adult care home foodservice management were studied within the context of this study. Literature reviewed relevant to the study included the following topics: cost control, food and labor cost, menu planning, and purchasing and production policies and procedures.

## REVIEW OF LITERATURE

### Cost Control

#### Food Cost Control and Cost Control Systems

Success of a foodservice operation depends largely on the ability of the manager to control costs (8). Raw food costs are a major expense in the dietary department budget of a health care facility (8,9). These costs must be controlled from the time the supplies are received until the food is prepared and served (9).

Martency et al. (11) estimated that ten to fifteen per cent of the budget of a fifty bed nursing home is spent for food. For example, if a resident pays \$400 per month in a 100-bed home, the total income is \$480,000 and the budget for food is \$48,000.

According to Lane (12), administrators need to realize that managing the foodservice of an adult care home is a substantial business and needs to be managed with the finesse of a commercial operation. When revenues fail to cover expenditures, it may not be possible to increase the residents' cost of care to provide funds for the additional expenses (5). A number of authorities stressed that costs must be managed, not merely reacted to when over-expenditures occur (12,13). Effective systems provide current cost information and procedures for necessary corrective measures (14).

An adequate and accurate record keeping system is the acknowledged beginning point for effective management of food costs (5,15-17). Records should include raw food costs, labor and maintenance costs, planned menus and modifications, purchase orders, inventories, meals served, and production records. Brodner, Carlson, and Maschal (18) stated that a complete food cost

control system includes controls in all functional areas: purchasing, receiving, storing, issuing, production, inventory, and sales. Written records enable management to assign costs to certain periods of time, denote responsibility, and facilitate comparisons. Powell (5) emphasized that cost control is achieved by effective controls in daily operations. She considered cycle menus, standardized recipes, daily forecast of number to be fed, cost of food issued to preparation centers, potential budgeted cost for the day, and actual daily costs as the essential statistics, tools, and records.

Parks (8) listed five reasons for daily food cost accounting: to furnish information to management concerning daily operations, to arrive at accurate costs to be used in establishing the price of meals, to standardize the cost of recipes, to give data for preparing budgets, and to secure better financial reports. If substantial deviation from expected operations occur, the reasons can be traced through adequate written records (5,15-17). Califano (14) stated that there is no foodservice operation that cannot benefit in some way from a standard system of records for food cost control.

A survey of hospitals, which represented all areas of the United States, indicated a general lack of cost control in foodservice departments (19). Results demonstrated that little is known about the actual operating costs other than raw food costs. In some hospitals the payroll amount was known, but in others the foodservice statistics were not maintained separately from the hospitals' entire payroll. Inadequate record-keeping systems for cost control have been noted in other hospitals and adult care homes (7,20-22).



## Food Costs in Hospitals and Adult Care Homes

Reported information indicates there is considerable variation in the raw food cost per patient day. Raw food costs varied from \$0.90 to \$1.05 per patient day in a survey in 1970 of several nursing homes and a large hospital in Minnesota (23). A big-city hospital had average raw food costs of \$1.75-\$1.85 per patient day in 1972 (24). Gavazzi and McGuire (25) reported that the total cost per meal in a Veterans Administration Hospital in Washington, D.C., was \$1.30 in May, 1971, and \$1.32 in October, 1970. A nursing home in Illinois had total foodservice costs of \$2.85 per patient day in 1969 (26). The John F. Kennedy Memorial Hospital in Philadelphia reported a total per meal cost of \$1.21 in 1970 (27). The 1970 average raw food cost per person per day for adult care homes in New York state was \$1.07 (28). In 1972, Peddersen (29) reported that a 201-bed New York hospital had an average daily per person cost of \$1.83 for raw food and \$2.20 for labor, or a total of \$4.03 per patient day. In 1970-1971, St. John's Hospital, St. Paul, Minnesota, had a total cost per patient day of \$5.50 (30).

Data from a study of midwestern hospitals revealed food costs were generally lower in institutions with a patient census in excess of 1000 per day (19). Improved accuracy and consistency in cost accounting systems were recommendations of this survey.

An administrator of an 800 bed hospital in New York estimated that the total foodservice budget in 1972 was approximately \$3 million annually and accounted for five to six per cent of the total hospital budget (31). Compared to a commercial operation of comparable size, this amount would equal a sales volume of over \$188,000 per month. Regional variations, geographic location, institutional size and type of services are among

factors affecting costs; however, management effectiveness is also a key factor in foodservice cost control.

The continued rapid increase of costs in recent years places an even greater emphasis on cost and quality control of the foodservice. In view of rapidly changing markets and increasing prices of food products, management and cost control of foodservice operations in all health care facilities is crucial. For example, the United States Department of Agriculture (32) stated that the all-food wholesale price index during the third quarter of 1973 averaged twenty-five per cent higher than 1972. Wholesale farm prices in 1973 were almost fifty-three per cent above 1972 and grocery store food prices of 1973 averaged 15-17 per cent above those of 1972 (32).

#### Labor Costs, Staffing Patterns, and Productivity

The number of employees needed in a dietary department is dependent on several factors (33). Differences in productivity rates are influenced by the number of people served, where they are served (dining room or rooms), kind of equipment used, and type of food used (33). Forty to fifty per cent efficiency ratings are recorded for typical foodservice employees (34). Research on labor time in hospitals since 1955 has not indicated a trend toward an increase in productivity (35).

To serve 130-145 meals three times a day, Rodenborn (36) found that fourteen full-time and eight part-time employees were needed. The full-time employees worked 672 hours a week and a total of 788.5 hours were worked by all employees. A similar number of workers were reported by other authors. Pieper (37) stated that thirteen full-time equivalents were needed for a 100-bed nursing home. One part-time and thirteen full-time employees served

eighty-three residents in a dining room setting and seventeen residents requiring room service in an adult care facility studied by Stamm (38). Meal service required twelve minutes of total labor per meal served in the dining room, or five meals per man hour. From a survey of 118 hospitals in 1969, Kotschevar, Owens, and Saylor (38) determined that the productivity rate varied from 3.9-25.3 meals per man hour with an average of 11.6 meals. In a later study, Kotschevar (40) estimated that five meals were produced per labor hour in nursing homes and related facilities and hospital foodservice produced slightly less than three meals per man hour.

The U.S. Public Health service has prepared the following estimates in regard to dietary personnel required in small hospitals (100 beds or less) (41):

<u>Beds</u>	<u>25</u>	<u>30</u>	<u>40</u>	<u>50</u>	<u>60</u>	<u>75</u>	<u>90</u>	<u>100</u>
Employees	4	5	6	7	8	10	11	12

Staffing patterns varied widely in small institutions surveyed by Hagwood (42) and Vaden (7). Vaden's (7) results showed the following staffing ranges for small hospitals in West Texas:

<u>Beds</u>	<u>18-25</u>	<u>30-40</u>	<u>46-50</u>	<u>51-60</u>	<u>61-75</u>	<u>76-90</u>
Employees (Full-time equivalents)	2.7-6.0	5.2-9.1	6.0-10.8	7.1-12.5	7.1-8.0	7.0

Small hospitals and nursing homes in Kansas reported the number of persons employed in institutions of 40 beds or less varied from one to ten; whereas, in the institution with forty-sixty beds, the number ranged from four to fifteen (42).

## Supervision of Foodservices

Cabot (43) expressed the opinion that the most pressing problem of the dietary department of adult care homes is employment and retention of a capable foodservice supervisor or cook-manager. A capable manager is needed to provide quality food at an acceptable cost. Getty and Hollensworth (44) stated approximately seventy per cent of the hospitals with more than 100 beds and forty per cent of the hospitals with less than 100 beds employ foodservice supervisors to augment the services of a full time, part-time, or consultant dietitian. In adult care homes of less than 100 beds, supervisors usually have been designated as responsible for the supervision of the foodservice and often are directly responsible to the administrator (45). In many nursing homes the use of a foodservice supervisor in combination with the regularly scheduled consultation of a dietitian has fulfilled the requirements of Health Insurance for the Aged Program, Title XVIII, popularly called Medicare, and has provided professional dietary management within feasible budget limits (46).

Reports indicate more qualified dietitians are being employed to supervise the foodservice of health care facilities today than in previous years. Only three of 410 nursing homes used the services of a qualified dietitian in a 1960 study in Indiana (22). Sixteen of the homes were participating in a nutrition consultation program. Less than five per cent of the foodservices were being supervised by a qualified person. A 1957-1958 survey of 152 hospitals in Minnesota showed that twenty-two per cent employed dietitians (20). Results of a 1964 survey conducted by The American Dietetic Association indicated that 12.9 per cent of the hospitals under fifty beds had dietitians directing the foodservice (47). Dietitians supervised the

dietary department in 36.0 per cent of the 50-99 bed hospitals. Institutions located in areas of low population density have difficulty in securing services of a professional dietitian. For example, Vaden (7) found that only four per cent of the qualified dietitians lived in the thirty-nine counties of 10,000 or less which were included in her survey of dietitians in sixty-five West Texas counties. Two of the twenty-three small hospitals in her interview survey hired a dietitian.

After the adoption of Medicare, forty-three of the sixty-four responding facilities (64.6 per cent) surveyed by Hagwood (42) in 1971, stated that they hired a full-time, part-time, or a consulting dietitian. The following supervisory patterns of hospitals and nursing homes were reported in 1972 (48).

<u>Beds</u>	<u>49 or less</u>	<u>50-99</u>	<u>100-199</u>	<u>Total</u>
Foodservice managed by:				
Cook-Manager	10	3	0	13
ADA Dietitian	30	35	47	179

Direction of the dietary department of 104 Kansas hospitals was studied by Biggs (49) in 1973. Institutional size was a significant factor in employment of professional dietitians. Dietitians were employed more often in larger institutions. Overall, fifty per cent of the foodservices were managed by an ADA dietitian (31.7 per cent) or a home economics graduate (18.3 per cent).

## Menu Planning

### Meal Plan

The menu is the basic management tool for any foodservice organization (1,50). Cost control of purchasing, labor, and equipment needs are influenced by the menu (50).

For several years much interest has been shown in the five meal a day plan as contrasted to the traditional three meals a day. The five meal plan consists of two full meals, a brunch and dinner, and three lighter meals or snacks (51). These lighter meals are served about 7 A.M., 1 P.M., and 8 or 9 P.M. Some institutions have changed to the five meal a day plan in an effort to reduce labor costs. Reports varied concerning the cost of the three meal plan in comparison with the five meals a day plan. Lane (52) suggested that there was no difference in cost, if both were well managed. Hagberg (53) cited slightly less per meal cost with the five meal a day plan at a 195-bed facility which adopted the plan in 1967. Comparative per meal costs listed were \$0.3417 for the five meal plan and \$0.3447 for the three meal plan.

A hospital in New York reported disposable expense increased by about 20 per cent for the five meal plan (54). Rapp (55) found that salaries and wage expenses decreased with the five meal plan; paper goods, general supplies, and miscellaneous expenses increased. Raw food costs increased slightly. He stated that when all factors were considered the five meal plan was costing the hospital considerably more than the three meal plan. According to a survey conducted by The Modern Hospital less than five per cent of the reporting institutions had changed from the three meal to five meal plan (55).

## Cycle Menus

The trend in institutional meal planning has been the increased use of cycle or rotating menus because of their many advantages (1). Hubbard, Sharp, and Grant (56) define cycle menus as a set of carefully planned menus which are rotated according to a definite pattern. Many factors influence the length of the cycle, but three to five weeks usually appear to be the most satisfactory (1).

The use of cycle menus can contribute to foodservice cost management through standardization which is facilitated in purchasing, production, and staff controls (5,57,58). Training is easier with a cycle menu system because employees can become more familiar with the work to be done than with constantly changing menus (56,57). Cycle menus can be more costly, however, if not changed to incorporate seasonal foods (56). Stinnett (59) suggested a shorter cycle menu helps to control costs more effectively than a longer cycle because lower inventories are required.

Employment of professionally trained dietitians to direct the foodservice in a health care facility appears to influence the use of cycle menus. Little or no advanced menu planning was done in almost half of the hospitals surveyed in Minnesota (20). Menus were planned by the week in one-fourth of the hospitals. In hospitals where dietitians or home economists were employed menus were planned two weeks in advance or cycle menus were used. Length of menu cycles varied from two to seven weeks. Jolin and McKinley (6) reported cycle menus were used in fifty-nine per cent of the hospitals they studied. Eighteen per cent of the small hospitals in West Texas used cycle menus (7).

An increased number of hospitals and adult care homes used a cycle menu system in recent studies by Hagwood (42) and Biggs (49). Hagwood (42)

found that 86.2 per cent of the facilities surveyed used cycle menus. Most of the cycle menus (fifty-eight per cent) were two to three weeks in length. One-third were from four to five weeks. In Bigg's (49) study 85.2 per cent of the hospitals indicated they were using cycle menus. A majority of the hospitals (51.1 per cent) were using the two to three week cycle length. The four to five week cycle was used by 35.9 per cent of the hospitals.

Frequent review of menus is recommended to correlate the current cycle with price fluctuations and to take advantage of lower market prices (15). Nutritionally similar items that are currently lower in price can be substituted for the planned more expensive ones.

#### Modified Diets

Statistics indicate the ratio of modified diets to total meals served in nursing homes varies widely (from seventeen per cent to fifty per cent) (60,61). Most modified diets can be prepared from regular inventory items. Special foods which are more expensive may have to be purchased for sodium restricted diets. Concepts in the diet therapy for diabetes have changed considerably in the last few years. Planning of diabetic diets from regularly stocked food items is recommended (62). Caso (62) emphasized that speciality foods are not required for diabetic patients. These foods often are expensive and the information on the package may be misleading (62).



## Purchasing, Inventory, and Production Controls

### Policies and Procedures Related to Cost Control

Purchasing policies affect both food and labor costs (10,63). Proper purchasing procedures provide an operation with the products most suited to the needs of the nursing home at the most economical price possible (64).

Responsibility for purchasing in adult care homes and small hospitals varies with local conditions. Basic factors that influence operational purchasing policies and procedures are location of the facility, number of residents, number and skill of the employees, and type and quality of food needed (15,64,65). Purchasing procedures and policies also are controlled by present inventory and available storage space (66,67). Major conditions that affect purchasing decisions are the availability and price of foods, state of the economy, and reliability of vendors in regard to services and products (15,63,65,67).

Several authorities stressed the importance of price and quality comparisons between vendors as a cost control factor (15,17,63,67). The American Hospital Association (15) recommends obtaining bids from at least three vendors for small orders and more, if possible, for larger ones. Unless a nursing home is very small, Proud (66) suggested procurement of meat, eggs, and fresh produce from at least two vendors. Brodner, Carlson, and Maschal (18) emphasized the importance of competitive buying and standard specification for purchase of non-perishable stock items. These controls contribute not only to quality assurance but also to effective financial management (15,17,65,66).

Establishment of regular schedules for purchases has been recommended for nursing home food and supply procurement (66,67). Both wholesalers and

retailers often provide better service and sometimes lower prices when orders are placed at definite times and deliveries can be scheduled in advance (66). Written records and charts facilitate cost and quality comparisons (15,17, 65,66).

### Sources of Supply

Major sources of supplies available to nursing homes are: wholesale food houses, manufacturers and packers, local farmers and producers, municipal markets, cooperative associations, and retail food stores (64). Wholesale food houses are the most common purveyors of food for most operations. Baltz (68) suggested that small nursing homes can benefit also by quantity buying from wholesalers. Many manufacturers and packers, such as ice cream plants, bakeries, or meat packers will sell directly to the user (64). Although some buyers believe prices will be lower if purchases are made directly from the dealer to eliminate the middleman, this is not always true. The alert buyer should obtain prices from all sources available and compare costs of individual food items. Local markets may provide a source for eggs and for seasonal fresh fruits and vegetables at reasonable prices for some operations. Within recent years cooperative associations have become increasingly important in the wholesale field. Competitive prices on farm and dairy products may be available from these distributors (64).

Retail food stores generally are not recommended for institutional buying, except for emergencies. They are geared to sell to the retail trade; and even though some stores offer price reductions to institutions the food buyer usually can obtain better prices elsewhere (64). Small institutions often are located in fairly non-competitive market areas and as a result the buyer may have relatively few sources of supply. This situation requires

that he be knowledgeable and alert to quality, prices, and services available to select the best purveyor (57). Lofquist et al. (20) found that hospitals with less than thirty beds purchased most of their food from the retail market in the local community. The administrators realized it would be possible to purchase food more economically, but purchases were made from area retail merchants to satisfy local interests and to maintain good public relations. In her West Texas study of small hospitals, Vaden (7) found that the good will approach of local retail purchasing to promote community relations was quite common. Respondents indicated that thirty-eight per cent of the hospitals purchased food and supplies from retail markets in the local community (7).

Baltz (68) stressed that buying from local sources is advisable only if the prices are competitive. Zaccarelli (63) warned that buying on the basis of friendship is one of the common purchasing faults. Lofquist's et al. (20) survey also indicated that meat was purchased from retail stores by sixty-three per cent of the hospitals. Almost one-third of the hospitals bought meat by the whole carcass or other primal cuts (20). Reports from a survey of adult care homes in New York State showed that three-fourths of the respondents purchased meat from the local butcher (66). The remaining one-fourth bought meat from a wholesaler (66). Vaden (7) stated that fifty-five per cent of the hospitals in her study bought carcass beef or other primal cuts and had the meat fabricated for use.

Cabot (69) advises against purchase of carcass beef unless the buyer carefully specifies the finished retail cuts. If the home has meat fabricated for use, a comparison of the cost per pound and serving should be made with other available sources (69).

An experienced purchase may be able to negotiate year-end discounts and special rates (68). The American Hospital Association recommends that institutions investigate the merits and accessibility of discount purchasing available through some vendors (15).

#### Purchasing Responsibility

According to the American Hospital Association, purchasing is more efficient and economical when it is done by the person managing the food service department who is familiar with the market conditions (15,64). Food purchasing was the responsibility of the cook-manager or foodservice supervisor in forty-five per cent (68 out of 152) of the hospitals surveyed in Minnesota (20). Dietitians purchased food in one-half (17 of 34) of the hospitals that hired a dietitian (20). The foodservice supervisor or the cook-manager in charge of foodservice purchased food in thirteen of the twenty-two small hospitals studied in West Texas (7). Spears (21), a former consultant for small hospitals and nursing homes, related that quite often the purchasing for these institutions is done by someone unfamiliar with the dietary department.

#### Projection of Inventory Requirements

Several authors emphasized the importance of planning and then buying only according to those needs (15,16,63). Baltz (68) and Kelley (57) recommended that procurement time be correlated with the cycle menu. If ample storage space is available, substantial savings may be possible when staple goods are purchased by case lots (68). Although the price reduction per case is nominal, sizeable total savings can result (63). Jose (70), a California nursing home administrator, believes purchasing through quantity buying is one of the two principal factors in saving money.