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I am submitting herewith a thesis written by Erskine R. Smith entitled "Forecasting Educational and Training Requirements and Responsibilities for Consulting Dietitians to Nursing Homes." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Food Systems Administration.

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FORECASTING EDUCATIONAL AND TRAINING REQUIREMENTS
AND RESPONSIBILITIES FOR CONSULTING DIETITIANS TO
NURSING HOMES

A Thesis
Presented for the
Master of Science
Degree
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ABSTRACT

The adequacy of present dietetic education and training programs was investigated, and the future responsibilities and educational and training needs of consulting dietitians were explored through the use of the Delphi forecasting technique. The two panels of experts in this study were composed of 42 consulting dietitians to nursing homes and 100 administrators of such facilities in the State of Tennessee. Information was obtained by means of three rounds of Delphi questionnaires.

Profile data were obtained from the panels in Delphi Round I. Consulting dietitians indicated whether or not they performed responsibilities listed on the questionnaire as functions for consulting dietitians. The dietetic consultants rated how well their education and training prepared them to perform the responsibilities. Administrators indicated whether or not the dietetic consultants performed the responsibilities listed on the questionnaire and rated the consulting dietitian's performance.

Seventy-seven per cent of all responses from dietitians relating to their educational preparedness to perform the responsibilities were adequate or above. Ninety-four per cent of the administrators' responses were recorded for adequate or above adequate performances by consulting dietitians.

The panels in Delphi Round II, rated the importance of statements describing possible educational and training needs and

possible responsibilities of consulting dietitians to nursing homes within the next ten years. All statements exceeded the required 50 per cent for ratings of very important or important by the panels for consensus of opinion and were included in the final Delphi round. The range of the percentages of dietitians' rating statements as very important or important was 73 per cent to 100 per cent. The administrators' range was from 59 per cent to 100 per cent.

In the final Delphi round, the panels were asked to rank the statements from Round II. The questionnaire was divided into two parts. Part A was comprised of 13 statements related to forecasted educational and training needs, and Part B described 19 forecasted responsibilities.

A Spearman's rank order correlation of 0.89 was obtained for the panels rankings of Part A and a value of 0.80 was calculated for the panels rankings of Part B, both correlation values were significant at $P < .05$

More courses in management science, personnel management, verbal and written communications, sanitation and safety, and equipment, layout and design were indicated as future educational needs of the consulting dietitian.

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CHAPTER I

INTRODUCTION

The problems that have confronted the consulting dietitians in the past, and those that must be faced today and in the future, are different than those faced by contemporaries in hospital settings. In a position paper of The American Dietetic Association (Anon., 1971) the suggestion was made that dietitians should be trained in specialty areas beyond their core requirements. The consulting dietitian is such a specialist serving as an advisor to a facility and rendering specific dietary care services. Communication skills and the ability to apply principles of nutrition in a variety of institutions and in relation to current concepts from the psychologic and sociologic sciences were stated by Montag (1969) to be essential for the consulting dietitian. The specialty of consulting dietetics has evolved over the past twenty years due to the increased need of professional dietetic services to meet accreditation of institutions supported by state and federal programs to provide more health care for the aged, for mothers and infants, and for an increased number of extended care facilities (Anon., 1974; Piper, 1970). The bed capacity for extended care facilities has increased over 100 per cent between 1960 and 1970 with the employment rate in these facilities showing an increase of over 130 per cent in the same period (Kotschevar, 1973).

Emerson (1971) reported that most dietitians receive their training in large urban teaching hospitals. The goals of the

consultant are generally the same as those of the full-time dietary department head, but the methods of achieving them are different. A consultant should be a specialist in and have a thorough knowledge of the field in which one proposes to advise others (Paster, 1971).

Light (1971) stated that actual task analysis of professional positions is needed to form a realistic structure of educational programs. A more relevant mixture of general education and specialized training needs are required in our educational programs to meet those needs.

Perry (1970) suggested that dietetic educators are in need of information relating to what is occurring in the profession at present, and what is projected for the future. This information could serve as a basis for evaluation of present and future programs. To insure adequate planning and preparation for the profession, it was stated that educators should consider if there is an exchange of information between educators and practitioners, and if there is a continuing evaluation of curriculum as it related to positions graduates accept.

A position description and task analysis must be done for each specific job level (Piper, 1969), and each must be analyzed in relation to specific tasks and techniques and in relationship to the patient and to other members of the health care team. Educational programs must be designed with statements of objectives and evaluations of roles, functions, and duties to match the prepared job descriptions and analyses.

The purpose of this research was, through the use of the Delphi forecasting technique, to: (1) ascertain the present adequacy of the education of the consulting dietitian; (2) explore the future responsibilities of the consulting dietitian; and (3) explore the future educational needs of this group of specialists.

CHAPTER II

REVIEW OF LITERATURE

Centrifugal specialization was reported by Hart (1974) to be occurring within the profession of dietetics as newer specialties develop, such as dietitians working in computerized programs, in rehabilitation centers, alcoholic and drug programs, centers for mental retardation, extended care facilities, and others. The American Dietetic Association (Anon., 1974a) stated consulting dietetics is a growing specialty. It has been part of the profession for at least twenty years. Newer fields have opened up for the consulting dietitian such as child care centers, school lunch and advising on layout and equipment for new foodservice systems. A survey of employed dietitians in 1972 revealed that 14.3 per cent of working dietitians considered themselves as consultants (Sharp, 1973). Paster (1971) stated that a consultant must be an expert in and have a thorough knowledge of the field in which one proposes to advise others.

I. CONSULTING DIETITIANS

Qualifications and Responsibilities

A qualified dietetic consultant was described as a person who is eligible for registration by The American Dietetic Association, and has a baccalaureate degree with major studies in food and nutrition, dietetics, or foodservice management, has one or more years of supervisory experience in the dietetic service of a health care institution,

and participates annually in continuing dietetic education (Smith, 1974; Anon., 1974b; Anon., 1974c). Robinson (1967) suggested that dietetic consultants have a knowledge of nutrition, diet therapy, experience in food systems administration, and an interest in and understanding of people. Dietetic consultants should also have a knowledge of state, county, and city licensing standards, and be familiar with the conditions of participation for extended care facilities. The American Dietetic Association (Anon., 1971) pointed out that if dietitians are to work through other people, an understanding of the psychologic and sociologic sciences is essential.

Montag (1969) reported that a consultant serves as a staff person providing advice and service, while the full- or part-time hospital dietitian is a line person, planning and directing the foodservice. Montag (1969) and Emerson (1971) stated there were two major differences between the consultant and a full- or part-time dietitian. The differences were the limitations of the consultant's time, and the consultant's lack of authority to implement programs and changes in procedures.

Educational Needs

Hart (1974) stated that in the beginning of any new specialty, a professional acquires on-the-job experience and may take academic courses in areas to meet specific needs of the evolving specialty. As the specialty area matures, academic programs develop and the specialty takes on added stature and/or, in some instances, a graduate program develops.

Perry (1970) stated that educational programs must be designed with statements of objectives and evaluation of roles, functions, and duties to match the prepared job descriptions and analysis. A job description and a thorough job analyses must be done for the specific job level in each allied health program. Each must be in relation to specific tasks and techniques, in relationship to the patients and to other members of the health team. It is not possible to differentiate the various levels of proficiency, levels of performance, and responsibility without the above base, and it is also necessary for evaluation of present and future programs. When evaluating and planning dietetic and clinical experiences for dietitians, Piper (1969) suggested that there be a continuous exchange between the educators and practitioners, a continuing evaluation of the curriculum as it relates to positions graduates accept, a request for feedback from graduates on how well their training and education equipped them to do the job, and increased communication between educators and practitioners of other health professions to insure good working relationships.

Sanford et al. (1973) investigated recent graduates of hospital dietetic internships to ascertain the graduates' perceptions of the adequacy of the internships in preparing the graduates for employment in their first position in hospital dietetics. The relationships of specified learning experiences to the graduates' perceptions were explored. The research was designed to study learning experiences in administrative areas only. Mailed questionnaires were used to collect data from 461 graduates who had at least one year of experience

in hospital dietetics.

Fifty-nine administrative elements were grouped into 14 subjects. Graduates were asked to assume that these 14 subjects formed part of their first position, and to rate how well their internship prepared them to perform these duties.

A study was conducted by Schiller (1973) to determine the level of agreement that exists among physicians and dietitians on activities that comprise the role of the dietitian. The extent to which differences exist between present role expectations and role performances of dietitians, and the various forces that dietitians perceive as hindering their performance were studied. Data were obtained from 721 clinical dietitians and 728 physicians through the use of a mailed questionnaire.

Need for Specialization

During recent years, practitioners in the field of dietetics have been confronted with unbelievable technologic advances, enlightening research results and more readily available supporting resources thus changing the role of the dietitian. Those responsible for educating dietitians must cope with the need to adopt educational processes to coincide with this altered role. Current trends have required dietitians to enlarge their sphere of practice and make a major contribution in the delivery of health care in a variety of settings (Anon., 1971).

In a position paper of The American Dietetic Association (Anon., 1974d) it was stated that the consumer of dietetic services has the right to expect excellence of dietetic practice. It was

also stated in the report that the responsibility for setting and maintaining standards for dietetic education is a responsibility of The American Dietetic Association.

In another position paper of The American Dietetic Association (Anon., 1971) it was reported that if the dietitian's role is to become increasingly varied and complex, a person would be required to become knowledgeable about the principles of nutrition, highly skilled in communications, devoted to conceptual thinking and adept in the application of its products, and oriented to research. It was suggested that by limiting areas of study and practice, specialization and proficiency can be achieved by limiting the scope of individual pursuit.

Hart (1974) stated that the explosion of knowledge has forced a different kind of health delivery system. Specialization has evolved with preventive care replacing acute care and the team approach replacing the individual approach. The Delphi forecasting technique is one method of achieving communication between dietetic educators, practicing dietitians, and practitioners of other health professions and evaluation of academic requirements as related to positions accepted by graduates.

II. DELPHI TECHNIQUE

The Delphi technique as described by Matthews et al. (1975) is a process that elicits and refines group judgments through systematic solicitation of opinions of knowledgeable individuals. Cetron (1969) stated that the Delphi technique is more than just a

technological forecasting method, for it combines forecasting with the perceived wants or needs of the participants. Its original intent was to eliminate the direct debate with the use of a selective program of questionnaires (Arnfield, 1969). The sequentality of the technique was derived principally from the fact respondents do not always agree in the initial phase of questioning, and since consensus among them was of considerable interest, the experimenters (Dalkey and Helmer, 1963) had to feed back information from one phase to the next, in statistical form. This process continued until consensus or dissensus was achieved.

This technique assured that the anonymity of the responses was preserved throughout the exchange of information. It eliminated the influence of coercion, unwillingness to abandon publicly expressed opinions by panel members, and the bandwagon effects of majority opinions (Arnfield, 1969).

Cetron (1969) and Arnfield (1969) reported that Delphi makes use of the systematic treatment of data that includes self review and aggregation of experts intuitive assessment of related imponderables. Arnfield (1969) stated that the original users of Delphi were not interested in producing a forecast in the traditional sense. Rather, their aim was to explore courses of action; and to explicate them to the extent that their feasibility can be estimated and their operational consequences at least generally understood.

This technique as reported by Cetron and Ralph (1971) asks questions that are relevant and important to the panel members. It does not produce a forecast of the future, but presents an overview

of expectations held by person knowledgeable in the field. The results provide an additional frame of reference for persons who must consider policy options likely to have major impact on different aspects of their field.

Modifications of the Delphi Technique

Since its original inception, the Delphi technique has had several modifications. Cetron (1969) in his study of Naval Supply System Command developed the Delphi SEER form. This technique differed from the original in that it provided statements of events and situations for the panel members to evaluate for importance, desirability, and feasibility of occurrence. A second panel, not composed of the original members, evaluated those statements that the first had rated as important, desirable, and feasible. This sequence was repeated with a third panel evaluating the second panel.

Schnieder (1972) used the Delphi technique as a policy making tool. This modification consisted of alternatives for the panel members to evaluate for importance, desirability, probability, and validity in a regional training program for Seattle. A second questionnaire was used to further extrapolate more data about those rated high in the second round.

A modification of the technique was used by North and Pyke (1969) in their study of industrial developments. The first round was identical to the original Delphi technique; however, the succeeding rounds differed. The panel was asked not only to rate those items deemed desirable, practical, and probable as indicated by the first round

responses, but to predict the year that the event had a reasonable chance of occurrence, a 50-50 chance and almost certain chance of occurrence.

Uses of Delphi in Education

The Delphi technique, developed originally as a decision-making tool for forecasting factual material, has gained considerable recognition and use in a variety of areas. In addition to being employed for prediction in business and social sciences, in recent years, the Delphi technique has been used in educational planning to determine general and specific goals and objectives at all levels of program planning. The technique has been used in curriculum and campus planning and in the development of evaluation criteria such as rating scales, and effectiveness and cost/benefit measures (Matthews et al., 1975; Judd, 1972). A common procedure using Delphi in education is to have each participant rate a series of items relating to educational goals and objectives with results used for decision-making and perceptive planning of educational programs (Winstead and Hobson, 1971).

Cyphert and Gant (1970) stated that most schools of education, and for that matter most universities, operate on the apparent assumption that persons inside the organization control its destiny. It was stated that no one can deny the significant and essential influence of students, faculty, and administration. It is equally fallacious and dangerous to deny or ignore the powerful impact of forces and persons outside the organization. The need for scientifically assessing the needs, desires, and opinions of clientele was

behind the exploration of the potentialities of the Delphi technique by the School of Education at the University of Virginia. Questionnaires were sent to various groups of people in the state to solicit their opinions about curricula, goals, and programs for the School of Education. The targets ranked highest by respondents were concerned with increasing the quality of the educators graduated by the school, the improvement of the school curricula, and the discovery and development of the knowledge needed to bring about this desired quality. The data generated by this study were quite usable for assisting in formulating future targets of the School of Education.

Evaluation of the Delphi Technique

Grabbe and Pyke (1972) in their evaluation of forecasting methods reported that the Delphi technique was as reliable, if not better than, most methods of forecasting in vogue today, having a comparable record with other methods of short and intermediate range. In forecasts for development of computers, this technique was considered a very fine tool. The Delphi technique could be of a questionable standard for long-range forecasting since many of the projected dates had not occurred at the time of the study.

Cetron (1969) pointed out that some of the disadvantages of the Delphi technique as originally used were: panel members disliked beginning with a blank piece of paper; the number of interactions required by the technique resulted in a heavy use of time; after several rounds the panel members were possibly evaluating events out of their area of expertise; and, no effort was made to identify

inter-related events and no identification of short-, mid-, or long-range goals was made.

One method of distributing the Delphi questionnaire has been by the United States mail (Schnieder, 1972; Cyphert, 1970). Mailed questionnaires meet the criteria for distribution of the instruments used in the Delphi forecasting technique.

III. MAIL QUESTIONNAIRES

Sear (1967) stated that the advantages of mail questionnaires were the ability to gather information conveniently from experts dispersed over a very large area, greater reliability of answers than could be obtained from a team of interviewers, greater validity of answers, and increased access to persons who might not otherwise be available for an interview.

Disadvantages of mail questionnaires presented by Sear (1967) were the potential bias produced by differentiated response rates of various groups, the inability to produce a question sequence that is guaranteed to be observed, and the inability to use deep-probing questions.

Studies reported in the literature indicated the response rate was influenced by content of cover letter, follow-up techniques used, and type of postage.

Cover Letter Content

Sear (1967) defined two types of cover letters. An altruistic cover letter was defined as one in which the content elicits responses based upon the direct benefits provided the research organization

by the response act. An egoistic cover letter differs in that emphasis is placed upon the importance of the recipient to the research organization while directly benefiting the respondent in terms of the sponsoring organization's gratitude to him. It was found that the response was greater to questionnaires associated with egoistic cover letters than those associated with altruistic cover letters by a percentage difference which was statistically significant at $P < .05$.

A factor analytic study by Linsky (1965) revealed that the content of the cover letter accompanying a mail questionnaire had a significant effect on the response. An increase in response was observed when cover letters were used which stressed the importance of the respondent in the study or when the appearance of personal concern for the participant was given. Roehrer (1963) using several experimental techniques, concluded that the personalized element in communication with the person from whom a response was desired and the development of the appearance of individual consideration was the key to achieving a high rate of response.

Follow-up Letters

Nichols and Meyer (1966) found that a postcard follow-up sent 3 days after the original questionnaires was very effective. The highest response rate was obtained from a combination of an early and later follow-up which produced 77 per cent return versus 51 per cent for a group that received no early postcard reminder by the twenty-seventh day. These authors concluded that the sooner a postcard follow-up was sent, the more effective it was.

Postage

Sear (1967) reported that questionnaires with regular postage were returned more frequently than those using bulk postage, but the difference between proportions returned was not statistically significant. Though the difference was not significant at the .05 level, for some practical purposes the difference in response was large enough to warrant the use of regular postage rather than bulk postage, e.g. when a sample is small. But for studies in which the sample is relatively large, the difference in response indicated that regular postage would not be worthwhile.

CHAPTER III

PROCEDURE

The Delphi forecasting technique was modified for the purpose of ascertaining the adequacy of the present education of consulting dietitians, and to explore the educational needs for the future role of consulting dietitians to nursing homes as perceived by consulting dietitians and nursing home administrators in the State of Tennessee. The original Delphi method allowed for the continued questioning of the panel until consensus or dissensus was achieved. For this study the technique was modified to use not more than five rounds of the Delphi questionnaires and to use two groups of experts.

I. DELPHI ROUND I

The initial round of the Delphi questionnaire was to ascertain the present adequacy of dietetic education programs and to establish profile data for the panel members.

Profile Questionnaires

The dietitians' profile questionnaire was designed to collect data that would give the researcher some insight into the dietitians' background. Questions included in this questionnaire were centered around the consulting dietitians' experience, education, membership and status in The American Dietetic Association, and factors associated with the specialty of consulting dietetics.

The administrators' profile questionnaire was designed to collect

data that would give the researcher some knowledge of five areas concerning either the nursing home administrator or the nursing home. Questions included were concerned with the administrators' experience, education, and professional affiliations. Other areas of questions were concerned with the ownership and size of the facility, and if the facility had services of a dietitian.

Questionnaire I

The dietitians' Questionnaire I was designed to ascertain the present adequacy of dietetic educational programs. Using a scale developed by Sanford et al. (1973), consulting dietitians were asked to rate how well their education and training prepared them to perform functions identified for consultants by The American Dietetic Association (Anon., 1974c). The following scale was used to rate the adequacy of dietetic education programs:

- 5--completely adequate
- 4--very adequate, very helpful, and could not have easily been improved
- 3--adequate, helpful, needed little improvement
- 2--somewhat inadequate, could have been improved considerably
- 1--very inadequate, very little help

In addition to rating each educational statement, the dietitians were asked to indicate whether or not they were presently performing the functions described in the statements on the questionnaire.

The administrators' Questionnaire IA was designed to ascertain how well employers of practitioners of the specialty of consulting dietetics rated the performance of consulting dietitians.

Using a modification of the scale developed by Sanford et al. (1973), the administrators were asked to rate how well the dietetic consultant performed the functions identified by The American Dietetic Association (Anon., 1974c) as responsibilities for consultants. The administrators were asked to indicate whether or not the consulting dietitian performed the functions described in the statements, and to rate performance of those marked yes according to the following scale:

- 5--completely adequate
- 4--very adequate cannot easily be improved
- 3--adequate, needs little improvement
- 2--somewhat inadequate, needs to be improved considerably
- 1--very inadequate

Pilot Group

Three consulting dietitians from the Knoxville area served as a pilot group for the evaluation of the format and content of Delphi Round I Questionnaires. The members of the pilot group were selected because of their experience as dietetic consultants and their personal contacts with other dietetic consultants throughout the state.

Two of the three pilot members were employed by the State of Tennessee; one held a position as nutrition consultant for the East Tennessee Regional Health Office, and the other member was employed by the State Public Health Department as a Dietetic Consultant for the regional medical office. The third member had experience as a dietetic consultant for the Tennessee Hospital Association, and experience as a dietetic consultant in private business.

The researcher of this project interviewed the members of the pilot group to obtain their opinions about the format and content of Round I questionnaires and to obtain opinions on the future responsibilities and educational requirements of a consulting dietitian for use in compiling the second round questionnaires.

II. SUBSEQUENT DELPHI ROUNDS

Statements for the initial forecasting round of future educational needs and responsibilities were derived from the pilot group interviewed to obtain opinions concerning possible changes needed in the education and training of consulting dietitians, those responsibilities indicated as not presently being performed from the result of Round I, findings in the literature related to the subject, and the researcher's assessment of these sources.

The dietitians and administrators were asked for the initial round to rate the statements formulated using a modification of a scale developed by Schnieder (1972). The following scale was used to rate the importance of the statements: very important, important, slightly important, and unimportant. The panel members were asked to give reasons for their ratings for each statement included on the questionnaire and to add other statements as desired.

Responses received from the initial forecasting round were evaluated as to per cent receiving a rating of very important or important. Those statements receiving a total rating of 50 per cent or more as very important or important were removed from the questionnaire and held for the final Delphi round. Those statements

receiving a total rating of less than 50 per cent for important or very important were retained for use in the next Delphi round. Additional statements added on the responses were incorporated in the questionnaire for the next round. A maximum of three rounds was scheduled for determining forecasting of future responsibilities and educational needs. Those statements not receiving consensus of opinion from 50 per cent of the respondents after the third round were eliminated in compiling the final Delphi round designed to establish priority rating of statements considered very important or important.

III. FINAL DELPHI ROUND

The final questionnaire was designed to have the dietitians and administrators rank in order of priority the statements describing possible future responsibilities and educational and training needs that a consensus of the panel rated as very important or important in previous Delphi rounds.

This questionnaire was divided into two parts. Part A included statements describing possible future educational and training needs of consulting dietitians and Part B included statements describing possible future responsibilities of consulting dietitians. The panel was asked to rank the statements in Part A of this questionnaire from one to n with n representing the maximum number of statements. The panel was asked to rank the statements according to their degree of priority with one denoting the statement with the highest priority, and n denoting the statement with the

least priority. No number was used more than once in the ranking of the statements. The statements in Part B were ranked from one to n with n representing the maximum number of statements. Using the same guidelines as for Part A, the panel was asked to rank the statements in Part B for their degree of priority with one representing the statement with the highest priority and n denoting the statement with the least priority.

For statements to be included on the final round, a consensus was defined as a minimum of 50 per cent of the responses to the statements rated as very important or important from the preceding Delphi forecasting rounds.

IV. SELECTION OF DELPHI PANEL

Consulting dietitians to licensed nursing homes, and administrators to such facilities in the State of Tennessee, served as the Delphi panel for this study. The administrators were selected from a list of 200 licensed nursing homes in the state provided by the State of Tennessee's Bureau of Health Resources, Office of Health Care Facilities Certification and Licensure (Anon., 1974e). A randomized distribution table was used to select a sample of 100 nursing home administrators.

The consulting dietitians were composed of the 42 dietitians identified by the above office from the 1974-75 membership list of The Tennessee Dietetic Association.

The researcher divided the panel into two groups in order to separately study the views of practitioners of consulting dietetics

and their employers. The 100 administrators composed one group while the other group was made up of the 42 consulting dietitians.

Because the Delphi technique has as one of its objectives the anonymity of responses, it was not possible to identify those panel members that did or did not return questionnaires. Therefore, each round of the Delphi questionnaires was sent to the entire panels. If a panel member did not participate in a previous round, that panel member could participate in the current and following rounds and was encouraged to do so in the cover letter sent with each round.

V. DISTRIBUTION OF DELPHI QUESTIONNAIRES

Each Delphi round was sent by United States mail and included the appropriate Delphi questionnaire, a cover letter, and a self-addressed, stamped, return envelope. In addition to the above, Round I included an explanation of the Delphi technique. The rounds were scheduled to be mailed at 3-week intervals.

Intervals

Each of the rounds of the survey were mailed at 3-week intervals. The participants were encouraged to return the questionnaires by a specified date which was 10 days after the mailing date, to allow the researcher sufficient time to prepare the next round of questionnaires to be mailed at the designated 3-week interval.

Color Coding

The questionnaires for each of the Delphi rounds were color coded to insure the identity of consulting dietitians from those

of nursing home administrators. All materials sent to dietitians were green and to administrators were white.

Stamps

To increase the participation by the recipients of the Delphi questionnaires self-addressed, stamped, return envelopes were included for the ease of returning the questionnaires. Stamps used were commemorative issues currently in use at the time of mailings.

Cover Letter

The cover letters were written with egoistic content for the purpose of inducing a higher rate of participation by the recipients of the Delphi questionnaires. Because of the importance of the final Delphi round, a follow-up postcard was mailed to the participants to increase the per cent of participation. This card was mailed approximately 2 weeks after the initial mailing of the final round.

VI. STATISTICAL ANALYSES

Delphi Round I

In Round I the percentages were determined of yes and no responses of the dietitians as to whether or not they performed the responsibilities identified. Mean scores were calculated of the dietitians' ratings of how well their education and training prepared them to perform the functions identified. Frequency of each rating for each statement was tabulated.

Profile Data were summarized with mean scores, ranges, and/or percentages calculated as appropriate.

As to whether or not the consulting dietitians performed the functions described in each of the statements, the percentages of the yes and no responses were determined from the nursing home administrators replies. Mean scores were calculated for the administrators' ratings of how well the dietetic consultant performed the functions marked yes. Mean scores were obtained from the information on the administrators Request for Profile Data. Percentage of the type of ownership of the facilities was determined.

Subsequent Delphi Rounds

The dietitians' and administrators' ratings were determined by use of a frequency table as to the importance of each statement on the Delphi Questionnaires for forecasting future educational needs and responsibilities. The percentages for each of the four possible responses were calculated. A sum of the percentages for ratings of very important and important was determined for each statement to ascertain whether consensus had been attained by either, or both, of the groups for each statement. A minimum of 50 per cent was needed to attain consensus.

Final Delphi Round

On the final round the dietitians and administrators were asked to rank statements which had obtained the desired consensus of opinion from previous Delphi forecasting rounds. Each statement in the two parts of this questionnaire was given an identification letter. Part A of the questionnaire included statements forecasting future educational and training needs. The identification letters for Part A were A to n with n denoting the last statement appearing

on this section of the questionnaire. Part B of this questionnaire included forecasted future responsibilities of the dietetic consultant. These statements were identified by the letters A to n with n representing the last statement appearing on this section of the questionnaire.

The numerical values, one to n with n representing the maximum, was totaled for each statement in the two parts of the questionnaire to determine rank order. The statements in each part of the questionnaire were ranked according to their total numerical values with the lowest total representing the highest priority.

To determine the degree of agreement of opinions between the members of a group, a Kendall coefficient of concordance was calculated for each group. For the purpose of determining the relationship of opinions between the dietitians and administrators, a Spearman rank order coefficient was calculated.

CHAPTER IV

RESULTS AND DISCUSSION

Three rounds of the Delphi questionnaires were required to obtain desired profile data and consensus of opinion on present and future educational needs and responsibilities of consulting dietitians in Tennessee. The panel of experts consisted of 100 nursing home administrators and 42 consulting dietitians in the State of Tennessee. The panel was treated as two independent groups for the purpose of identifying differences in priority of opinions between consulting dietitians and employers of the dietetic consultants.

I. DELPHI ROUND I

The initial round of the Delphi survey consisted of a profile data sheet (Appendix A), cover letter (Appendix A), information on the Delphi technique (Appendix A), and a questionnaire (Appendix A).

Profile Data

Background information was desired from the dietitians to give the researcher information concerning the educational achievement and experiences of this group of panel members. Information relating to the administrators years of experience as a nursing home administrator and the years of formal education was needed to give the researcher some insight into the backgroup of this group of panel members.

Education and training. Of the 42 consulting dietitians and 100 nursing home administrators sent request for profile data, 30

dietitians (71 per cent) and 34 administrators (34 per cent) responded. Not all of the dietitians or administrators responding answered the questionnaire in its entirety. Twenty-seven dietitians responded to questions about the number of years worked as a dietitian and the number of years as a dietetic consultant to nursing homes. The mean for years worked as a dietitian was 13.8 years. Approximately 26 per cent of the dietitians had worked 20 years or more. The mean for years as a dietetic consultant was 5.96 years. Fifty-two per cent of the dietitians had consulted for 5 years or less. Only two consultants had no experience prior to assuming the responsibilities of a dietetic consultant to nursing homes (Appendix Table D-1).

The mean of the administrators' years as a nursing home administrator was 7.5 years. The administrators' years of formal education ranged from 11 years to 21 years with a mean of 15.2 years (Appendix Table D-2). Only one administrator had less than 12 years of education. Twenty-one per cent of the administrators had 12 years of education and 32 per cent had 13 to 15 years of formal education. Sixteen years of formal education was reported by approximately 15 per cent of the respondents. Twenty-nine per cent of the administrators reported that they had 17 to 21 years of formal education.

Approximately 70 per cent of the dietitians responding attained membership in The American Dietetic Association through a dietetic internship. The dietetic traineeship program and the advanced degree route were means for membership for approximately 15 per cent each. None of the consultants had attained membership through a

Coordinated Undergraduate Program in Dietetics. All but one of the respondents were Registered Dietitians.

Nursing homes. The nursing homes served by the dietitians and managed by the administrators responding in this Delphi Round were categorized into 7 groups by bed capacity. Intervals of 25 beds were used to group the nursing homes. The dietitians reported serving a total of 60 nursing homes (Table 1). The number of facilities served per dietitian ranged from 1 to 9. Sixty-eight per cent of the nursing homes reported by dietitians ranged in size from 51 to 125 beds. A range in size from 26 to 100 beds comprised 76 per cent of the facilities managed by the administrators responding to this questionnaire.

Twenty-eight nursing home administrators reported that the facility they managed retained the services of a dietetic consultant. One of the six administrators reported that the facility did not retain the services of a dietetic consultant but rather employed a full-time dietitian. Five administrators reported no professional dietetic services available. The bed capacity of these facilities ranged from 26 to 50 beds.

The mean hours of service rendered per month to each nursing home reported by the dietitians was 11.1 hours while the administrators reported receiving 11.3 hours per month (Table 1). The range of monthly hours of service rendered reported by the dietitian was from 4 to 60 hours. The administrators reported a range of monthly consulting hours received from 4 to 36 hours. Forty-six per cent

TABLE 1

MONTHLY HOURS OF DIETETIC SERVICES RECEIVED BASED ON
BED CAPACITY AS REPORTED BY DIETITIANS AND ADMINISTRATORS

Group	Bed Capacity	<u>Dietitians' Response</u>		<u>Administrators' Response</u>	
		Nursing Homes (Number)	Hours of Dietary Care (Range)	Nursing Homes (Number)	Hours of Dietary Care (Range)
A	1 to 25	4	6 to 32	2	8 to 16
B	26 to 50	7	4 to 12	11	4 to 12
C	51 to 75	15	8 to 32	8	4 to 20
D	76 to 100	12	4 to 16	7	8 to 32
E	101 to 125	14	8 to 16	3	4 to 16
F	126 to 150	2	8 to 60	0	0
G	151 and above	6	8 to 20	3	8 to 36

of the facilities received 8 hours per month of dietetic services according to the administrators. The dietitians reported that 38 nursing homes (63 per cent) received 8 hours or less of dietetic consultation per month. The dietitians spent an average of 2.5 hours in preparation for a consultation.

In response to the question of whether or not the nursing home was operated by a hospital or some other type of special patient institution, 76 per cent of the administrators indicated that the facilities were privately owned (Appendix Table D-3). Eighteen per cent of the administrators reported that the facilities were operated by a hospital or some special patient institution. Two administrators did not respond to the question.

Consultant Responsibilities

Thirty of the 42 consulting dietitians returned Questionnaire I (Appendix A) concerning the 19 functions of a consulting dietitian as identified by The American Dietetic Association (Anon., 1974c). Fourteen of the responsibilities were administrative, items 1 to 13 and item 18, and 5 were clinical, items 14 to 17 and item 19. The dietitians were asked to indicate whether they were presently performing each function and to indicate how well their education and training prepared them to perform the functions. They were asked to rate how well their education and training prepared them to perform the functions using a scale developed by Sanford et al. (1973). A scale from 5 to 1 was used with the highest number indicating a more adequate education and training and the lowest number indicating

a less adequate education and training. For example, 5 points indicated education and training was completely adequate and 1 point if education and training was considered inadequate or very little help. It was not necessary for a dietitian to respond to whether or not a function was presently performed to include the ratings of how well the education and training had prepared the dietitian to perform the function.

The mean of the dietitians' ratings of how well their education and training prepared them to perform the administrative functions was 3.4 with a standard deviation of 0.49. Ratings of 5 points were recorded for 24 per cent of the replies to questions concerning education and training (Table 2). Twenty-five per cent of the responses were for 4 point ratings and 27 per cent were for 3 point ratings. Twenty-four per cent of the replies were recorded for the two categories below adequate with 16 per cent and 10 per cent of the responses for 2 point and 1 point ratings respectively. Of the 401 responses to whether or not the dietitians performed the 14 administrative functions, 92 per cent responded the tasks were performed, and 8 per cent responded the tasks were not.

The mean of the dietitians' ratings of how well their education and training prepared them to do clinical functions was 3.5 with a standard deviation of 0.40. Twenty-five per cent of the responses were given 5 point ratings (Table 3). Four point ratings were recorded for 30 per cent of the responses and 28 per cent of the responses were for 3 point ratings. Seventeen per cent of the responses were recorded for the two categories below adequate,

TABLE 2

NUMBER OF DIETITIANS PERFORMING ADMINISTRATIVE FUNCTIONS AND
ADEQUACY OF EDUCATION AND TRAINING TO PERFORM THE FUNCTIONS

Number	Statement	Functions Performed		Education and Training	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
1	To evaluate and monitor foodservice systems.	28	0	24	4
2	To make recommendations for a level of food-service operation that will provide nutritionally adequate quality food.	28	0	26	2
3	To evaluate dietetic personnel performances.	27	3	22	8
4	To give guidance for improving dietetic personnel performances at all levels.	28	2	24	6
5	To plan, organize, and conduct in-service educational programs for foodservice personnel.	29	0	20	9
6	To assist in the development of budget proposals and recommend procedures for cost control.	20	8	16	12
7	To assist in the planning of layout designs and determining the equipment requirements for a new or renovated foodservice facility.	20	10	13	17
8	To recommend standards for sanitation, and safety.	28	0	26	2

TABLE 2 (continued)

Number	Statement	<u>Functions Performed</u>		<u>Education and Training</u>	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
9	To assist clients in regard to the selection and procurement of food.	25	2	22	3
10	To consult with administrators about foodservice.	28	0	23	5
11	To develop, maintain, and use pertinent record systems related to the needs of the organization and the consulting dietitian.	26	3	15	14
12	To maintain effective verbal and written communication and public relations, inter- and intra-departmental.	29	0	23	6
13	To develop menu patterns for all categories of patients in the facility.	27	2	26	3
18	To do administrative tasks effectively and efficiently.	24	4	24	4
Totals		367	34	304	95

TABLE 3

NUMBER OF DIETITIANS PERFORMING CLINICAL FUNCTIONS AND ADEQUACY
OF EDUCATION AND TRAINING TO PERFORM THE FUNCTIONS

Number	Statement	<u>Functions Performed</u>		<u>Education and Training</u>	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
14	To interpret, evaluate, and utilize pertinent current research relating to nutritional care	24	4	24	3
15	To develop use, and evaluate education materials related to the service provided the patients.	23	5	22	6
16	To assess, develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports.	23	2	18	7
17	To consult with the health care team concerning the nutritional care of patients.	28	1	23	6
19	To do therapeutic tasks effectively and efficiently.	28	1	27	2
Totals		126	13	114	24

9 per cent for 2 point ratings, and 8 per cent for 1 point ratings respectively.

When both clinical and administrative functions were combined a mean score of 3.41 was obtained. A standard deviation of 0.49 was calculated for all functions rated by the dietitians. Ratings of adequacy and above were obtained for 78 per cent of the responses, while 22 per cent of the responses were ratings below adequate (Tables 2 and 3). Twenty-five per cent, 26 per cent, and 27 per cent of the responses were recorded for ratings of 5 point, 4 point, and 3 point respectively. For ratings below adequate 14 per cent were 2 point ratings, while 8 per cent were 1 point ratings.

Of the 540 responses to whether or not the dietitians performed the 19 functions, 91 per cent were yes responses and 9 per cent were no responses. Thirteen of the 19 statements on Questionnaire I were given at least one no response (Tables 2 and 3). Forty-nine per cent of the no responses were centered around three statements. Twenty-one per cent of the no responses were for design and layout functions; 17 per cent were for budgetary planning; and 11 per cent were for development of materials related to patient services.

Administrators' Ratings

Of the 100 nursing home administrators sent Questionnaire I (Appendix A), 26 administrators responded. The administrators were asked to indicate whether the dietetic consultant performed the 19 administrative and clinical functions listed and to rate how well the dietetic consultant performed those functions that were marked yes, using a modification of a scale developed by Sanford et al. (1970).

Twenty-six of the nursing home administrators returning Questionnaire IA responded to questions of whether the dietetic consultant performed the functions included on the questionnaire, and how well the dietetic consultant performed the functions. A mean of 3.9 and a standard deviation of 0.25 was obtained for the administrators' ratings of how well the dietetic consultant performed the administrative functions. Ninety-four per cent of the ratings were adequate and above (Table 4). Thirty-one per cent of the responses were for 5 point ratings. Thirty per cent of the responses were for 4 point ratings and 33 per cent were for the 3 point responses. Five per cent of the responses were for 2 point ratings. Less than 1 per cent of the responses were for ratings of 1 point. Of the 360 responses to whether or not the dietitians performed the administrative functions, 85 per cent were yes responses and 15 per cent were no responses.

A mean of 3.7 and a standard deviation of 0.07 was obtained for the administrators' ratings of how well the dietetic consultant performed the clinical functions, items 14 through 17 and 19. Ninety-one per cent of the responses relating to clinical functions were rated adequate or better (Table 5). Thirty per cent of the ratings for dietitians' performances of clinical functions received 5 point ratings. Four point ratings were recorded for 24 per cent of the responses and 3 point ratings were recorded for 37 per cent of the responses. Nine per cent of the responses were recorded for 2 point ratings. There were zero responses for 1 point ratings.

When both administrative and clinical functions were combined a mean of 3.83 with a standard deviation of 0.26 was obtained.

TABLE 4

ADMINISTRATORS' RATINGS OF DIETETIC CONSULTANT'S
PERFORMANCE OF ADMINISTRATIVE FUNCTIONS

Number	Statement	Functions Performed		Level of Performance	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
1	Evaluates and monitors foodservice systems.	25	1	25	0
2	Makes recommendations for a level of food-service operation that will provide nutritionally adequate quality food.	26	0	26	0
3	Evaluates dietetic personnel performances.	22	4	20	2
4	Gives guidance for improving dietetic personnel performances at all levels.	25	0	23	2
5	Plans, organizes, and conducts in-service educational programs for foodservice personnel.	25	1	25	0
6	Assists in the development of budget proposals and recommends procedures for cost control.	14	12	11	3
7	Assists in the planning of layout designs and determining the equipment requirements for a new or renovated foodservice facility.	12	13	12	0
8	Recommends standards for sanitation and safety.	25	0	24	1

TABLE 4 (continued)

Number	Statement	Functions Performed		Level of Performance	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
9	Assists clients in regard to the selection and procurement of food.	20	6	19	1
10	Consults with administrator about foodservice.	24	2	22	2
11	Develops, maintains, and uses pertinent record systems, related to the needs of the organization and consulting dietitian.	22	3	20	2
12	Maintains effective verbal and written communication and public relations, inter- and intra-departmental.	21	5	19	2
13	Develops menu patterns for all categories of patients in the facility.	25	1	23	2
18	Performs administrative tasks effectively and efficiently.	21	5	21	0
Totals		307	53	290	17

TABLE 5

ADMINISTRATORS' RATINGS OF DIETETIC CONSULTANT'S
PERFORMANCE OF CLINICAL FUNCTIONS

Number	Statement	Functions Performed		Level of Performance	
		Yes (Number)	No (Number)	Adequate (Number)	Inadequate (Number)
14	Interprets, evaluates, and utilizes pertinent current research relating to nutritional care.	26	0	25	1
15	Develops, uses, and evaluates education materials related to the services provided the patients.	22	4	21	1
16	Assesses, develops, implements, and evaluates nutritional care plans and provide for follow-up, including written reports.	21	4	17	4
17	Consults with the health care team concerning the nutritional care of patients.	21	4	18	3
19	Performs therapeutic tasks effectively and efficiently.	24	1	23	1
Totals		114	13	104	10

Ninety-four per cent of the administrators' ratings of consulting dietitians' performances were rated adequate and above. Thirty-one per cent of the administrators' responses were recorded for ratings of 5 points. Twenty-nine per cent and 34 per cent of the responses were recorded for 4 point and 3 point ratings respectively. Approximately six per cent of the responses were for 2 point ratings and less than 1 per cent for 1 point ratings of dietitians' performances.

Eighty-six per cent of the administrators responses to whether or not the dietetic consultants performed the functions listed in this questionnaire were yes responses. Of the 66 no responses to the questions, 38 per cent were for statements relating to budgetary planning and design and layout of facilities.

Comparison of Questionnaire I

The administrators' ratings of how well the dietetic consultants performed the functions listed on this questionnaire were higher than the dietitians' ratings for the adequacy of their training and education to perform the functions. The mean of the administrators' ratings of performance was 3.83 and the mean of the dietitians' rating was 3.41 of education and training. This difference may be due to the dietitians evaluating their preparedness at the entry level and the administrators evaluating present performance.

The mean of the years as a dietitian before entering the specialty of consulting dietetics was 7.85 years.

The dietitians and administrators both reported that the functions least performed were those related to budgetary planning and

design and layout. Thirteen of the functions were not performed by at least one of the dietitians while the administrators indicated that 15 of the functions were not performed by at least one of the consultants.

II. DELPHI ROUND II

In this round, both consulting dietitians and administrators were asked to rate the importance of each of 32 statements describing future responsibilities and educational and training needs of consulting dietitians to nursing homes within the next ten years. The responses for both groups were treated independently. There were four possible non-weighted responses for each statement: very important, important, slightly important, and unimportant. Very important and important responses were combined for each statement and the percentage of the total was determined.

There were 41 consulting dietitians sent Questionnaire II (Appendix B). One consultant moved out-of-state so was dropped from the study. Twenty-two dietitians or 53 per cent of the dietitians completed and returned the questionnaire for this round. Twenty-two per cent of the nursing home administrators completed and returned the Delphi Round II questionnaire.

Education and Training Needs

In response to the statements describing future educational needs, three of the statements were rated as very important or important by 100 per cent of the dietitians, while one statement was rated as such by the administrators (Table 6). One hundred per cent

TABLE 6

PERCENTAGE OF VERY IMPORTANT OR IMPORTANT RESPONSES FROM DIETITIANS AND
ADMINISTRATORS TO FUTURE EDUCATIONAL NEEDS FOR CONSULTING DIETITIANS

Courses	Per Cent of Responses	
	Dietitians*	Administrators
Written and verbal communications.	100	100
Management science and personnel management.	100	95
The concepts of microbiology, principles of sanitation and food safety, and the techniques for the inspection of food service units.	100	81
The biological, chemical, and nutritional sciences.	86	81
The principles of learning.	86	71
The sociocultural influences of food behavior.	86	70
Equipment, layout, and design engineering.	73	81

*In descending order for dietitians' responses

of respondents in both groups rated courses that would provide knowledge of written and verbal communication as very important or important. The dietitians commented that good communication was an important factor when one was not on location everyday. It was stated by the dietitians that communication should be used in every phase and at all levels to insure that follow-through is achieved. Communication was stated to be important by the dietitians because of a desire to keep the medical staff and administrators cognizant of needs. Keeping in touch with the nursing home was considered important and being able to talk on each level so as to secure cooperation was stated by the administrators as an important need for courses that would provide knowledge of communication. The administrators suggested that training in communication skills would help to eliminate a present problem relating to communications with the dietetic consultants.

Management science and personnel management courses were reported by the dietitians to be important because management is the key to a successful foodservice unit. Also, the dietitian provides instruction and assistance in these areas to foodservice managers. The administrators stated that courses that would provide knowledge of management and personnel management were needed because consultants need to evaluate personnel and place them in the right positions.

The dietitians indicated that the area of food safety and sanitation was being overlooked by inspectors to nursing homes. Therefore, if dietitians had the knowledge of the techniques for

inspecting foodservice units, this area could be inspected by the dietetic consultant. Reasons given for the importance of courses in this area by the administrators were generally to the effect that it is important for dietetic consultants in preparing inservice training programs for foodservice personnel.

Approximately 81 per cent of the administrators felt that courses in equipment, layout, and design engineering are needed in the education of consulting dietitians. The opinions given by the administrators were: the importance of taking care of equipment; to know how to use equipment; and the fact that time and energy can be conserved from proper layout and design of a foodservice unit. Seventy-three per cent of the dietitians rated courses in these areas as very important or important. The dietitians indicated that food equipment consultants and architects were now responsible for this function.

Three statements describing future training and experiences of consulting dietitians receiving ratings of very important or important ranged from 73 per cent to 96 per cent compared to a range of 80 per cent to 95 per cent for the administrators (Appendix Table D-4). Ninety-six per cent of the dietitians and 80 per cent of the administrators rated experiences in determining and writing of policies and procedures as very important or important. Skills in writing policies and procedures were suggested by the dietitians as a method of relating to the dietetic staff the aims and goals of the foodservice unit. Many facilities do not have policy and procedure manuals and the consultant should provide it, as reported by dietetic consultants to be a reason for the need of this experience to be included

in the future training of dietitians. However, the administrators indicated that the facilities usually have these and the consultant should have knowledge of how to improve them.

The dietitians commented that experiences in determining and writing nutritional care plans should be included in the future training of dietitians since dietitians are becoming a viable element in patient care. Ninety-six per cent of the dietitians and 95 per cent of the administrators rated this statement as very important or important. No comments were given by the administrators.

Seventy-three per cent of the dietitians rated experiences in small institutions (i.e. nursing homes or hospitals) as an important factor in the training of dietitians in the future. The primary reason given by the dietitians for this rating was the belief that quality training in basic principles of administration should be adaptable to all sizes of institutions. Ninety-five per cent of the administrators indicated that this was an important factor in the training of dietitians. The administrators suggested that most dietitians are prepared for large institutions.

Short term university courses, correspondence courses, and workshops or seminars, a statement describing possible future continuous education, received a rating of 96 per cent from the dietitians. The statement, articles in journals and other publications that are geared to the needs of health care consultants, also received a 96 per cent rating from the dietitians. Any means to keep abreast of changes and up-to-date which would help the consultant serve the

facility better was mentioned by the dietitians to be a reason for this rating. The administrators rated these statements as important as long as the workshops or seminars were pertinent and related to current problems of the consultants.

Responsibilities

The percentages of very important and important ratings for the 19 statements describing future responsibilities of consulting dietitians ranged from 77 per cent to 100 per cent for the dietitians, while the range for administrator was from 67 per cent to 100 per cent (Table 7). Two of the statements that received 100 per cent ratings were concerned with training dietetic technicians to make appropriate changes in nutritional care plans. The dietitians emphasized that dietetic technicians must be able to function in the absence of the consultant.

The dietitians indicated that conferring with other members of the health team regarding the nutritional care of the patients was important from the standpoint of the patients and as a means of elevating the profession of dietetics. It was pointed out that the trend of health care is toward the team approach. However, the dietitians' responded that assessing the patient's nutritional status and implementing nutritional care plans, while important was the responsibility of the physician.

Three statements describing budgetary planning and controls in the foodservice unit ranged from 85 per cent to 100 per cent as very important or important (Table 7). The dietitians' comments suggested

TABLE 7

PERCENTAGE OF VERY IMPORTANT OR IMPORTANT RESPONSES FROM DIETITIANS AND
ADMINISTRATORS TO FUTURE RESPONSIBILITIES OF CONSULTING DIETITIANS

Number	Responsibilities	Per Cent of Responses	
		Dietitians*	Administrators
1	Confer with other members of the health team regarding the nutritional care of the patients.	100	90
2	Recommend menus that will provide adequate quality food within the operational constraints of the facility.	100	95
3	Recommend controls in the foodservice units.	100	90
4	Train dietetic technicians to make appropriate changes in menu items when necessary.	100	86
5	Train dietetic technicians to make changes in nutritional care plans within constraints of the diet order when necessary.	100	81
6	Consult with the administrator about the foodservice unit through written and verbal communications.	96	95
7	Evaluate foodservice personnel and make recommendations for staffing, training, and development of personnel.	95	81
8	Develop, assist in implementation, and evaluate the effectiveness of record systems, related to the need of the organization and the consultant.	95	95
9	Identify areas for the foodservice staff that are sources of pathogenic organisms.	95	100

TABLE 7 (continued)

Number	Responsibilities	Per Cent of Responses	
		Dietitians*	Administrators
10	Interpret and evaluate current research relating to nutritional care.	95	78
11	Determine instructional objectives for the training of foodservice personnel.	95	95
12	Plan, implement, conduct, and evaluate personnel training.	95	84
13	Write policies and procedures for the foodservice unit.	90.5	90
14	Recommend food specifications to the client or his designate.	90	72
15	Assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports.	90	89
16	Write diet orders for patients and provide follow-up.	89.4	67
17	Make recommendations for the planning of new or renovated foodservice units.	86.3	81
18	Assist the administrator or his designate with the budget for the foodservice unit.	85	79
19	Determine objectives for patient instruction and classes.	77.3	70

*In descending order for dietitians' responses

that the implementation of budgetary planning and controls was dependent upon the ownership of the facility.

In response to statements relating to the training and development of foodservice personnel, items 4, 5 and 7, the consulting dietitians stated that this area was one of major concern and was vital if personnel were to function at the desired level in the absence of the consultant.

Only one statement item 9, describing possible future responsibilities of consulting dietitians was rated by 100 per cent of the administrators as very important or important. Consulting dietitians in the future will identify areas for foodservice staff that are sources of pathogenic organisms was given the highest rating by the administrators. No comments were given for the high rating of this statement.

Although the administrators indicated that recommending menus that would provide adequate quality food was a possible responsibility of the future, the comment was made that the foodservice manager should be trained to perform this function because of their familiarity with the communities' likes and dislikes. Administrators also suggested that most consultants should not recommend food specifications for the facility.

The administrators gave very few comments to the statements in this Delphi round. However, those that were given concerning possible future educational and training needs were similar in substance to those of the consulting dietitians.

All statements from this round received the required percentages for consensus of opinion and were included in Round III. Consensus of opinion for a statement was reached if rated as important or very important by 50 per cent of each panel of experts. The range of the percentage of dietitians rating statements in this round as very important or important was 73 per cent to 100 per cent. The administrators' ratings ranged from 59 per cent to 100 per cent for very important or important (Tables 6 and 7 pp. 42, 47 and Appendix D-4).

III. DELPHI ROUND III

In this, the final round, the dietitians and nursing home administrators were asked to rank in order of priority the statements from Round II describing possible future educational and training needs and possible future responsibilities of consulting dietitians. A Kendall concordance of agreement for the two types of statements was calculated for both groups of respondents. A Spearman Rank order correlation coefficient was determined to compare the responses of the two groups.

Questionnaire III (Appendix C) was divided into two parts. For Part A each panel was asked to rank the 13 statements describing possible future educational and training needs from 1 to 13, with 1 representing the highest priority. Each number was used only once. The total of the respondents' ranking for each statement was determined and arranged in ascending order to establish rank order. Part B of this questionnaire consisted of 19 statements ranked from 1 to 19. Questionnaires were not included in the data for this round

from respondents using any number more than once in ranking either Part A or Part B.

Dietitians' Responses to Education and Training

Of the 41 consulting dietitians sent Questionnaire III (Appendix C), 63 per cent responded. The dietitians ranked courses relating to management science, communications, and food safety and sanitation as their first, second, and third priorities respectively (Table 8). These courses were rated as very important or important by 100 per cent of the dietitians in the previous round.

The dietitians ranked the statements describing experiences to be included in the training of dietitians as fourth, sixth, and ninth. Two of the statements; determining and writing policies and procedures, and determining and writing nutritional care plans were rated as very important or important by 96 per cent of the dietitians.

Statements describing possible future means of continuing education for consulting dietitians which received ratings of important or very important by 96 per cent of the dietitians were ranked tenth and thirteenth.

The dietitians' degree of agreement was calculated by the use of a Kendall concordance of agreement formula. When the formula was applied to the dietitians' rankings, a 0.26 concordance of agreement was obtained. This value was significant at $P < .05$. This level of concordance represented little agreement among the dietitians for possible future educational and training needs of dietetic consultants. Such a low level of concordance may be reflecting individual needs and specific attributes of the facilities that they serve.

TABLE 8

DIETITIANS' RANKINGS FOR FUTURE EDUCATIONAL
AND TRAINING NEEDS OF CONSULTING DIETITIANS

Courses	Rank*
Management science and personnel management.	1
Written and verbal communications.	2
The concepts of microbiology, principles of sanitation and food safety, and the techniques for the inspection of foodservice units.	3
The determination of and writing of policies and procedures.	4
The biological, chemical, and nutritional sciences.	5
The determination of and writing of nutritional sciences.	6
Equipment, layout, and design engineering.	7
The principles of learning.	8
A small institution (nursing home or hospital).	9
Short term university courses, correspondence courses, and workshop or seminars.	10
Consultants should be required to have two to five years of experience.	11

TABLE 8 (continued)

Courses	Rank *
The sociocultural influences on food behavior.	12
Articles in journals and other professional publications that are geared to the needs of health care consultants.	13

*Rank of 1=highest priority

Dietitians' Responses to Future Responsibilities

Recommending menus that will provide adequate quality food within the operational constraints of the facility was rated by the dietitians as the number one priority (Table 9). In Round II, 100 per cent of the dietitians rated this responsibility as very important or important. In response to dietitians assuming the future responsibility of recommending food specification to the administrator, 90 per cent of the dietitians in Round II rated that function as very important or important, but in Round III, the statement ranked eighteenth out of nineteen responsibilities.

The two statements ranked seventh and tenth suggested that consulting dietitians would be responsible for training dietetic technicians. These two statements received 100 per cent ratings in Round II. The other three statements relating to the development and training of foodservice personnel were ranked third, eighth, and ninth. The dietitians indicated that developing and training foodservice personnel was an important function of the consultant.

Functions related to budgetary planning and controlling of the foodservice unit were not given high priority by the dietitians. Writing policies and procedures were rated sixth by the dietitians. The other two statements, recommending controls and assisting the administrators with the budget for the foodservice unit were ranked twelfth and nineteenth respectively.

Five statements were included on this questionnaire describing functions related to patient nutritional care. The dietitians rated

TABLE 9
DIETITIANS' RANKINGS FOR FUTURE RESPONSIBILITIES
OF CONSULTING DIETITIANS

Statement	Rank*
Recommend menus that will provide adequate quality food within the operational constraints of the facility.	1
Confer with other members of the health team regarding the nutritional care of the patients.	2
Evaluate foodservice personnel and make recommendations for staffing, training, and development of personnel.	3
Consult with the administrator about the foodservice unit through written and verbal communications.	4
Assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports.	5
Write policies and procedures for the foodservice unit.	6
Train dietetic technicians to make appropriate changes in menu items when necessary.	7
Plan, implement, conduct, and evaluate personnel training.	8
Determine instructional objectives for the training of foodservice personnel.	9
Train dietetic technicians to make changes in nutritional care plans when necessary.	10

TABLE 9 (continued)

Statement	Rank *
Identify areas for the foodservice staff that are sources for pathogenic organisms.	11
Recommend controls in the foodservice unit.	12
Develop, assist in implementation, and evaluate the effectiveness of record systems, related to the needs of the organization and the consultant.	13
Make recommendations for the planning of new or renovated foodservice units.	14
Write diet orders for patients and provide follow-up.	15.5
Determine objectives for patients instructions and classes.	15.5
Interpret and evaluate current research relating to nutritional care	17
Recommend food specifications to the client or designate.	18
Assist the administrator or his designate with the budget for the foodservice unit.	19

*Rank of 1=highest priority

the statement conferring with other members of the health team regarding the nutritional care of patients as second, and assessing patients nutritional care was ranked as fifth. The possibility of dietitians writing diet orders for patients was ranked fourteenth by the dietitian. The other two statements describing functions related to patient nutritional care were tied for fifteenth.

The dietitians' concordance of agreement was 0.31 for rankings of statements describing possible future responsibilities of a consulting dietitian to nursing homes. This concordance was significant at $P < .05$. There was little agreement among the dietitians responses forecasting future responsibilities. The low level of concordance may be reflecting individual needs and specific attributes of the facilities that they serve.

Administrators' Responses

Twenty-five nursing home administrators returned Questionnaire III (Appendix C). Statements ranked by administrators as one, two, and three in priority reflected courses that would include knowledge of management sciences and personnel management, sanitation and food safety, and communication skills (Table 10). The administrators indicated in Round II that consulting dietitians should be more knowledgeable in these areas and assume the appropriate responsibilities reflecting this knowledge.

The administrators ranked sixth the statement that the future training of dietitians should include experience in a small institution (i.e. nursing home or hospital), and ranked twelfth the statement

TABLE 10

ADMINISTRATORS' RANKINGS OF
EDUCATIONAL AND TRAINING NEEDS

Courses	Rank*
Management science and personnel management.	1
The concepts of microbiology, principles of sanitation and food safety, and the techniques for the inspection of foodservice units.	2
Written and verbal communication.	3
The biological, chemical, and nutritional sciences.	4
The determination of and writing of nutritional care plans.	5
A small institution (nursing home or hospital).	6
The principles of learning.	7
Equipment, layout, and design engineering.	8.5
The determination of and writing of policies and procedures.	8.5
Short term university courses, correspondence courses, and workshops or seminars.	10
The sociocultural influences on food behavior.	11

TABLE 10 (continued)

Courses	Rank*
Consultants should be required to have two to five years of experience.	12
Articles in journals and other professional publications that are geared to the needs of health care consultants.	13

*Rank of 1=highest priority

that consultants should have at least two years of dietetic experience prior to becoming a dietetic consultant. The administrators in Round II commented that experience was an important factor in being a successful consultant.

The continuing education of dietitians was not a high priority of the administrators. Statements describing means of continuing education for dietitians were ranked tenth and thirteenth.

A Kendall concordance of agreement for the administrators ranking for possible future education and training for dietetic consultants was 0.28. This value was significant at $P < .05$ per cent. This level of agreement indicated a low degree of agreement among the administrators. Differences of bed capacity, the type of ownership, and the administrators attitude toward the profession of dietetics could be factors contributing to the administrators' low level of agreement.

Administrators' Responses to Responsibilities

The administrators gave first priority to the statement that consulting dietitians in the future would recommend menus providing adequate quality food within the operational constraints of the facility (Table 11). Statements relating to the development and training of foodservice personnel were ranked by the administrators as third, sixth, seventh, eighth, and tenth priorities. Statements describing these functions in Round II received high percentages of very important or important ratings by both the administrators and dietitians.

TABLE 11

ADMINISTRATORS' RANKINGS OF FUTURE RESPONSIBILITIES
FOR DIETETIC CONSULTANTS

Statement	Rank*
Recommend menus that will provide adequate quality food within the operational constraints of the facility.	1
Confer with other members of the health team regarding the nutritional care of the patients.	2
Evaluate food service personnel and make recommendations for staffing, training, and development of personnel.	3.5
Plan, implement, conduct, and evaluate personnel training.	3.5
Assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide follow-up, including written reports.	5
Identify areas for the foodservice staff that are sources for pathogenic organisms.	6
Determine instructional objectives for the training of foodservice personnel.	7
Write policies and procedures for the foodservice unit.	8.5
Train dietetic technicians to make changes in nutritional care plans within constraints of the diet order when necessary.	8.5
	61

TABLE 11 (continued)

Statement	Rank *
Consult with the administrator about the foodservice unit through written and verbal communications.	10.5
Train dietetic technicians to make appropriate changes in menu items when necessary.	10.5
Assist the administrator or his designate with the budget for the foodservice unit.	12
Recommend food specifications to the client or his designate.	13
Develop, assist in implementation, and evaluate the effectiveness of record systems, related to the needs of the organization and the consultant.	14
Write diet orders for patients and provide follow-up.	15
Make recommendations for the planning of new or renovated foodservice units.	16
Recommend controls in the foodservice units.	17
Interpret and evaluate current research relating to nutritional care.	18
Determine objectives for patients instructions and classes.	19

*Rank of 1=highest priority

The administrators did not rank as high priority statements relating to controls and budgetary planning as future responsibilities of consulting dietitians. These statements were ranked as eighth (tied), twelfth, thirteenth, and seventeenth. The administrators' comments from Round II indicated that these functions were the responsibility of the nursing home administrator.

Patient nutritional care programs were given mixed rankings by the administrators. Dietitians conferring with other members of the health team concerning the nutritional care of patients was given second priority, and the assessment of patient nutritional status was ranked fifth. In response to the statement that within the next ten years dietitians should be responsible for writing diet orders, the administrators commented in Round II that physicians should be responsible for this. The statement was ranked fifteenth in Round III by the administrators.

When a Kendall's formula for concordance of agreement was applied to the administrators' ranking of possible future responsibilities, a small concordance, 0.23 was obtained which was significant at $P < .05$ per cent.

Comparison of Dietitians' and Administrators' Responses

A Spearman rank order correlation coefficient was calculated to compare the administrators' responses to those of the dietitians. The closer to a positive one value the Spearman coefficient, the more direct the relationship between ranking of the two groups. A Spearman rank order correlation coefficient of 0.89 was obtained for

the comparison of the two rankings of forecasted educational and training needs of consulting dietitians within the next ten years (Table 12). This was significant at $P < .05$ per cent.

This coefficient represented a strong direct relationship between the two groups. Statements B, K, and L were ranked identical by the two groups. The first three choices of both groups were composed of the same statements, but in a different order. The administrators indicated a higher preference for the statement that would include experience in a small institution (i.e. nursing home or hospital) in the training of dietitians.

When the Spearman formula was applied to the rankings of forecasted responsibilities of consulting dietitians, a correlation coefficient of 0.80 was obtained which was significant at $P .05$ per cent. Five of the statements describing responsibilities were ranked in the same position by both groups (Table 13). Statements E, B, and C were the first three choices of both groups. The two groups disagreed in the ranking for statements L, O, and P. These statements were related to dietitians consulting and recommending controls to the administrators.

The dietitians and administrators rankings for the two statements, R and S, describing training of dietetic technicians were slightly different.

TABLE 12

COMPARISON OF DIETITIANS' AND ADMINISTRATORS' RANKINGS OF FUTURE
EDUCATIONAL AND TRAINING NEEDS FOR CONSULTING DIETITIANS

Call Letter	Courses	<u>Ranking</u>	
		Dietitians*	Administrators
B	Management science and personnel management.	1	1
A	Written and verbal communications.	2	3
F	The concepts of microbiology, principles of sanitation and safety, and the techniques for inspections of foodservice units.	3	2
H	The determination of and writing of policies and procedures.	4	8.5
G	The biological, chemical, and nutritional sciences.	5	4
I	The determination of and writing of nutritional care plans.	6	5
E	Equipment, layout, and design engineering.	7	8.5
C	The principles of learning.	8	7
J	Experiences in a small institution (nursing home or hospital).	9	6
K	Short term university courses, correspondence courses, and workshops or seminars.	10	10

TABLE 12 (continued)

Call Letter	Courses	Ranking	
		Dietitians*	Administrators
M	Consultants should be required to have two to five years of experience.	11	12
D	The sociocultural influences on food behavior.	12	11
L	Articles in journals and other professional publications that are geared to the needs of health care consultants.	13	13

*Indicating dietitians order of priority

TABLE 13

COMPARISON OF DIETITIANS' AND ADMINISTRATORS' RANKINGS TO
FUTURE RESPONSIBILITIES OF CONSULTING DIETITIANS

Call Letter	Statement	Ranking	
		Dietitians*	Administrators
E	Recommend menus that will provide adequate quality food within the operational constraints of the facility.	1	1
B	Confer with other members of the health team regarding the nutritional care of the patients.	2	2
C	Evaluate foodservice personnel and make recommendations for staffing, training and development of personnel.	3	3.5
P	Consult with the administrators about the foodservice unit through written and verbal communications.	4	10.5
K	Assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide follow-up, including written reports.	5	5
Q	Write policies and procedures for the foodservice unit.	6	8.5
R	Train dietetic technicians to make appropriate changes in menu items when necessary.	7	10.5
J	Plan, implement, conduct, and evaluate personnel training.	8	3.5
F	Determine instructional objectives for the training of food-service personnel.	9	7

TABLE 13 (continued)

Call Letter	Statement	Ranking	
		Dietitians*	Administrators
S	Train dietetic technicians to make changes in nutritional care plans within constraints of the diet order when necessary.	10	8.5
H	Identify areas for the foodservice staff that are sources of pathogenic organisms.	11	6
O	Recommend controls in the foodservice units.	12	17
G	Develop, assist in implementation, and evaluate the effectiveness of record systems, related to the needs of the organization and the consultant.	13	14
A	Make recommendations for the planning of new or renovated foodservice units.	14	16
M	Write diet orders for the patient and provide follow-up.	15.5	15
N	Determine objectives for patient instruction and classes.	15.5	19
I	Interpret and evaluate current research relating to nutritional care.	17	18
D	Recommend food specification to the client or his designate.	18	13
L	Assist the administrator or his designate with the budget for the foodservice unit.	19	12

*Indicating dietitians' order of priority

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, AND SUMMARY

I. CONCLUSIONS

The findings of this study indicated the present education and training of dietitians prepared them to perform adequately 15 of the 19 responsibilities listed by The American Dietetic Association (Anon., 1974c). Preparation to perform the other 4 responsibilities which were rated inadequate included the ability to assist in the planning of layout and design, and determining equipment requirements for a foodservice unit. The mean score of the dietitians' ratings of how well their education and training prepared them to do this was 2.33 based on a rating scale of 1 to 5, with 5 being completely adequate. The dietitians' ratings of how well their education and training prepared them to perform duties related to financial management received an inadequate rating. Similiar ratings were obtained by Sanford et al. (1973) in a study of graduates of hospital internships.

Courses that were forecasted as the number one educational priority, which related to the future educational and training needs of consulting dietitians, were the courses that provided the knowledge of management science and personnel management. Both administrators and dietitians indicated that courses in communication and sanitation and safety are needed in the future education of consulting dietitians. The panel rated courses in communications and

sanitation and safety as such because of consulting dietitians' dual needs for these courses. The application of principles and theories learned in courses on communication skills and sanitation and safety was stated as needed for the successful operation of a foodservice unit. These courses are also needed for planning and conducting inservice classes for foodservice managers and other foodservice personnel.

Courses that provided the knowledge of the sociocultural influences on food behavior were not considered as important by the panels. A probable cause for the low ranking of this statement may be a misunderstanding of the term sociocultural influences on food behavior as indicated by comments made for this item on the questionnaires.

The statement requiring dietetic consultants to have a minimum of two to five years of dietetic experience, prior to assuming the responsibilities of a consulting dietitian, was ranked low by both panels.

The panels forecasted that the education and training needs of the consulting dietitian would change little within the next ten years. Both panels of experts suggested that more emphasis be placed on food sanitation and safety, written and verbal communications, and management science and personnel management.

The panels forecasted the future responsibilities of the consulting dietitian over the next ten years, would remain basically the same as at present. It was suggested by the dietitians that the

traditional functions of writing or menu planning would be the number one responsibility of the consulting dietitian. Other duties that were ranked as important responsibilities by the panels related to the planning, implementing, conducting, and evaluating of personnel and classes for personnel.

The panels forecasted that the consulting dietitian assess patients' nutritional status and develop, implement, and evaluate nutritional care plans as one of the major responsibilities within the next ten years. However, neither panel ranked writing of diet orders for the patient by the dietitian as an important responsibility for the dietitians, but indicated that this was a physician's duty. In a study of changing roles of the dietitian, Schiller (1973) found that 67 per cent of the dietitians responded that writing of diet orders should be the responsibility of the dietitian. Responses indicative of a restrictive role for dietitians suggested not all dietitians are willing to let go of the traditional role activities or to aspire to have a decision-making role in nutritional care. In this study the dietitians' responses and comments regarding patient nutritional care indicated that dietitians wish to have the additional function of writing diet orders, but at present this is the legal responsibility of the physician.

Within the next ten years, the education and training needs and the responsibilities of consulting dietitians to nursing homes will remain basically status quo, as seen by a random sample of nursing home administrators and dietetic consultants to such facilities in the State of Tennessee.

II. RECOMMENDATIONS

From the findings of this study more courses in management science and personnel management are indicated as needs of consulting dietitians because of the strong relationship between ability to apply the principles and theories and the successful operation of a foodservice unit. Because of the need to apply the skills of written and verbal communication in the successful operation of a foodservice unit, courses in communications need to be included in the future education of consulting dietitians.

Equipment, layout, and design engineering courses are needed in the future education of consulting dietitians. The administrators stressed the importance of the knowledge for reducing labor costs and insuring the proper flow of materials and use of equipment. Although architects and equipment companies may employ a dietitian to assist in the planning of a foodservice unit and selection of equipment, dietitians suggested persons familiar with the menu, type of service and other specific attributes of the facility should be included in the planning of the foodservice unit.

Universities, colleges, or other institutions of higher learning that offer courses relating to the profession of dietetics should sponsor workshops for consulting dietitians, nursing home administrators, and managers or supervisors of nursing home foodservice units, that are county, district, or regional wide. The panels indicated a preference for continuing education events that are concerned with their current and pertinent problems be offered

on a county- or district-wide basis.

More studies of this type are needed to evaluate the adequacy of the education and training of dietitians as the education and training relates to the positions graduates accept. An exchange between educators and practitioners of dietetics, their employers, and individuals from other health fields is needed to have a continuous evaluation and revision of on-going dietetic educational programs.

III. SUMMARY

The Delphi forecasting technique was used to ascertain the adequacy of present dietetic education and training programs, and to explore future responsibilities and educational and training needs of consulting dietitians. Forty-two consulting dietitians to nursing homes and 100 administrators of such facilities in the State of Tennessee served as the two panels of experts in this study. Information was obtained by means of 3 rounds of Delphi questionnaires.

In Delphi Round I, profile data were obtained from the panel members. Both panels were asked to indicate whether or not consulting dietitians performed responsibilities identified for dietetic consultants by The American Dietetic Association (Anon., 1974c). The dietitians were asked to rate how well their education and training prepared them to perform the responsibilities using a modification of a scale designed by Sanford et al. (1973). Administrators were asked to rate the dietitians performance of the responsibilities using a modification of the scale designed by Sanford et al. (1973).

Ratings of adequacy or above were obtained for 77 per cent of

all responses from dietitians relating to their educational preparedness to perform the responsibilities. Ninety-four per cent of the administrators' responses were recorded for adequate or above adequate performances by consulting dietitians.

The panels in Delphi Round II, rated the importance of statements describing possible educational and training needs and possible responsibilities of consulting dietitians to nursing homes within the next ten years. A modification of a rating scale developed by Schnieder (1972) was used by the two panels to rate statements in this round.

All statements in this round received the required percentages for consensus of opinion and were included in the final Delphi round. Consensus of opinion for a statement was reached if rated as very important or important by 50 per cent of each panel of experts. The range of the percentage of dietitians' rating statements in this round as very important or important was 73 per cent to 100 per cent. The administrators' ratings of very important or important ranged from 59 per cent to 100 per cent.

In the final Delphi round, the panels were asked to rank the statements from Round II. The questionnaire was divided into two parts. Part A was comprised of 13 statements related to forecasted educational and training needs, and Part B described 19 forecasted responsibilities.

A Kendall's concordance of agreement was calculated independently for each panel's ranking of the statements appearing on both parts of the final Delphi round. Kendall's concordance of agreement values

of 0.26 and 0.28 were obtained for the dietitians' and administrators' rankings for Part A respectively. Concordance values of 0.31 and 0.23 were calculated for the dietitians' and administrators' rankings for Part B of the final Delphi round respectively. All concordance values were significant at $P < .05$. The levels of agreement within each panel were low.

Spearman rank order correlations were calculated for the two panels ranking of both parts of the questionnaire for the final Delphi round. A correlation value of .89 was obtained for Part A and a value of .80 was obtained for Part B. Both correlation values represented strong direct relationships between the rankings of the two panels.

From the findings of this study more courses in management science, personnel management, verbal and written communications, sanitation and safety, and equipment, layout and design were indicated as educational needs of the consulting dietitian.

LIST OF REFERENCES

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- Anonymous. 1971. American Dietetic Association position paper: Education for the profession of dietetics. J. Amer. Dietet. Assoc. 59: 372.
- Anonymous. 1974a. Perspectives: Unusual positions and newer dietetic specialties. J. Amer. Dietet. Assoc. 64: 649.
- Anonymous. 1974b. Skilled nursing facility services: Rules and regulations. Federal Register. 39(2): 2245.
- Anonymous. 1974c. Titles, definitions, and responsibilities, for the profession of dietetics. J. Amer. Dietet. Assoc. 64: 661.
- Anonymous. 1974d. American Dietetic Association position paper on continuing education. J. Amer. Dietet. Assoc. 64: 289.
- Anonymous. 1974e. "Directory of Licensed Nursing Homes in Tennessee." Hospital Licensing Board, Nashville, Tennessee.
- Arnfield, R.V. 1969. "Technological Forecasting." Edinburgh University Press, Edinburgh.
- Cetron, M.J. 1969. "Technological Forecasting, A Practical Approach." Gordon and Breach Science Publishers, Inc., New York.
- Cetron, M.J. and Ralph, C.A. 1971. "Industrial Application of Technological Forecasting." Wiley-Interscience, New York.
- Cyphert, F.R. and Gant, W.L. 1970. The delphi technique: A tool for collecting opinions in teacher education. J. of Teacher Educ. 21(3): 417.
- Dalkey, N.C. and Helmer, O. 1963. An experimental application of the delphi method to the use of experts. Manage. Sci. 9: 458.
- Emerson, H.R. 1971. What does a dietary consultant do? Hosp. 45(13): 134.
- Grabbe, E.M. and Pyke, D.L. 1972. An evaluation of forecasting of information processing technology and applications. Technol. Forecasting and Soc. Change. 4: 143.
- Hart, M.E. 1974. Dietetic education-past, present, and future. J. Amer. Dietet. Assoc. 64: 613.

- Judd, R.C. 1972. Use of delphi method in higher education. Technol. Forecasting and Soc. Change. 4: 173.
- Kotschevar, L.H. 1973. "Foodservice for the Extended Care Facility." Institutions/Volume Feeding Magazine, Chicago.
- Light, I. 1971. Challenging perceptions of the health team members. J. Amer. Dietet. Assoc. 59: 13.
- Linksy, A.S. 1965. A factorial experiment in inducing responses to a mail questionnaire. Soc. and Soc. Res. 49: 183.
- Matthews, M.E., Mahaffey, M.J., Lerner, R.N. and Bunch, W.L. 1975. Profiles of the future for administrative dietitians via the delphi technique. J. Amer. Dietet. Assoc. 66: 494.
- Montag, G.M. 1969. Preliminary steps to effective dietary consultation. Hosp. 43(14): 130.
- Nichols, R.C. and Meyer, M. 1966. Timing postcard follow-ups in mail questionnaire surveys. Public Opinion Quart. 30: 306.
- North, H.Q. and Pyke, D.L. 1969. Probes of the technological future. Harvard Bus. Rev. 47(3): 68.
- Paster, I. 1971. So you want to be a consultant? Pers. J. 50: 827.
- Perry, J.W. 1970. Educating the dietitian in a changing world. J. Amer. Dietet. Assoc. 56: 387.
- Piper, G.M. 1969. Dietary manpower to meet demands for health services. J. Amer. Dietet. Assoc. 54: 376.
- Piper, G.M. 1970. Dietetic manpower trends in education and training. J. Amer. Dietet. Assoc. 57: 225.
- Robinson, W.F. 1967. Dietitian's role in nursing homes and related facilities. J. Amer. Dietet. Assoc. 51: 130.
- Roeher, G.A. 1963. Effective techniques in increasing responses to mailed questionnaires. Public Opinion Quart. 27: 299.
- Sanford, J.P., Mckinley, M.M. and Scruggs, M. 1973. Graduates of hospital dietetic internships. J. Amer. Dietet. Assoc. 63: 259.
- Schiller, R. 1973. The dietitian's changing role. Hosp. 47(17): 97.
- Schnieder, J.B. 1972. A policy delphi: A regional planning application. Technol. Forecasting and Soc. Change. 3: 481.

- Sear, A.M. 1967. Questionnaire response rate and social class: A methodological analysis. M.S. thesis, The University of Tennessee, Knoxville, Tennessee.
- Sharp, J.L. 1973. The dietetic profession-a manpower survey. J. Amer. Dietet. Assoc. 63: 430.
- Smith, C.E. 1974. Commentary: New federal regulations for skilled homes. J. Amer. Dietet. Assoc. 64: 467.
- Winstead, P.C. and Hobson, E.N. 1971. Institutional goals: Where to from here? J. Higher Educ. 42: 669.

APPENDIXES

APPENDIX A
DELPHI ROUND I

[Sample Cover Letter to Dietitians]

Dear

We would like your help in evaluating how well dietetic education programs are meeting the needs of the consulting dietitian.

As part of a long range project to determine how effectively dietetic education programs are preparing dietitians, we are conducting a statewide survey among nursing home administrators and consulting dietitians to such facilities as listed by the State of Tennessee's Bureau of Health Resources, Office of Health Care Facilities Certification and Licensure.

The purposes of this study are to:

Find out the opinions of two groups of experts (consulting dietitians and administrators) on the present adequacy of the training for consulting dietitians.

Forecast future competencies for the specialty of consulting dietetics.

The answers obtained will enable dietetic educators to be aware of the opinions of the practicing consultants and their employers and provide needed information for planning dietetic education programs to meet future forecasted needs.

A modification of the Delphi forecasting technique will be used in this study to obtain the needed information. Background information on the technique is enclosed.

Because of the limited number of consulting dietitians in Tennessee, your participation in the survey is very important for the accuracy of the data obtained. Please take a few minutes to complete the enclosed questionnaires and return them in the self-addressed, stamped envelope attached by March 13, 1975. You will receive the next round of the Delphi survey approximately March 24, 1975.

All answers are confidential and will be used only in combination with those of other consulting dietitians and administrators to extended care facilities.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Sample Cover Letter to Administrators]

Dear Administrator:

We would like your help in evaluating how well dietetic education programs are meeting the needs of the consulting dietitian.

As part of a long range project to determine how effectively dietetic education programs are preparing dietitians, we are conducting a statewide survey among nursing home administrators and consulting dietitians to such facilities as listed by the State of Tennessee's Bureau of Health Resources, Office of Health Care Facilities Certification and Licensure.

The purposes of this study are to:

Find out the opinions of two groups of experts (consulting dietitians and administrators) on the present adequacy of the training for consulting dietitians.

Forecast future competencies for the specialty of consulting dietetics.

The answers obtained will enable dietetic educators to be aware of the opinions of the practicing consultants and their employers and provide needed information for planning dietetic education programs to meet future forecasted needs.

A modification of the Delphi forecasting technique will be used in this study to obtain the needed information. Background information on the technique is enclosed.

Because we are surveying a limited number of nursing home administrators in the state, your participation in the survey is very important for the accuracy of the data obtained. Please take a few minutes to complete the enclosed questionnaires and return them in the self-addressed, stamped envelope attached by March 13, 1975. You will receive the next round of the Delphi survey approximately March 24, 1975.

All answers are confidential and will be used only in combination with those of other consulting dietitians and administrators to extended care facilities.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Explanation Accompanying Letters to Dietitians and Administrators]

The modified Delphi technological forecasting method is more than just a forecasting technique. It combines forecasting with the perceived wants and needs of the participants. Usual methods try to predict what could be, but Delphi is a method that polls experts until a consensus of opinion is reached. This method allows the experts to be as imaginative and realistic as possible yet involves a systematic treatment of data that includes the experts intuitive assessment of related imponderables.

This project is designed to use a minimum of four rounds of questionnaires as follows:

Round I will ascertain the present adequacy of dietetic education programs and establish profile data of the panel members.

Round II will solicit panel opinions about the competencies and educational needs of the consulting dietitian to extended care facilities within the next ten years. Panel members will be asked to rate the importance of the events and situations given in this round, and to give reasons for their opinions. The panel members will be encouraged to add other events and situations to the list.

Round III will give the panel members a chance to rate those events and situations from Round II that a consensus of the panel members felt were important.

Round IV will include only those events and situations that a consensus of the panel members agreed were important in Round III. In this round the panel will be asked to evaluate these events and situations for desirability, practicality, and probability of occurrence. In addition, the panel will be asked to predict the year that occurrence has a reasonable chance, has a 50-50 chance, and almost certain to have occurred. Each of the four rounds of the survey must be mailed at three-week intervals. Therefore, it is important that the questionnaires be returned as soon as possible so that the next round of questions can be devised.

Copies of the final forecasts will be made available upon request.

Your cooperation is greatly appreciated.

[Sample Profile Data Sheet to Dietitians]

1. How many years have you worked as a dietitian? _____
2. How many of these years as a consulting dietitian to extended care facilities? _____
3. Do you feel that some experience is needed before taking a consultant position? Yes _____ No _____
If Yes, how much? _____ Years _____ What kind? _____
4. Do you feel that an advanced degree is needed to be most effective and efficient as a consulting dietitian? Yes _____ No _____
5. Do you presently have an advanced degree? Yes _____ No _____
 - a. If not, are you presently engaged in work toward one? Yes _____ No _____
 - b. If the answer to question 5 or 5a is yes, what is (was) your major area? _____
 - c. If the answer to question 5 or 5a is no, are you interested in an advanced degree? Yes _____ No _____
6. Are you a Registered Dietitian? Yes _____ No _____
7. Route to A.D.A. membership:
I did my undergraduate work at _____
Date of degree _____
Type of program:
(Check one)
General _____
Other (specify) _____

A.D.A. requirements were met through:
(Check one)
Traineeship (preplanned experiences) _____
Internship _____
Coordinated undergraduate program _____
Advanced degree _____
8. How many extended care facilities are you presently serving? _____
9. Indicate the amount of time PER MONTH spent on premise in each facility served. Give the time in hours. Record the time in the blanks by the bed capacity of the facility.
Example: If you consult with three facilities with the bed capacity of 51-75 then three of the blanks for this size facility should have time recorded.

BED CAPACITY

1-25	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.
26-50	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.
51-75	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.
76-100	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.
101-125	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.
151 and above	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.	_____ HRS.

10. How much time do you spend traveling to and from your clients? _____
_____ HRS. per month.
11. How wide of an area do you serve? _____ MILES
12. How much time do you spend in preparation for a consultation?
_____ HRS.

[Sample Profile Data Sheet to Administrators]

1. How many years have you worked as a nursing home administrator? _____
2. Does the foodservice of this facility receive the regular services of a dietetic consultant? Yes _____ No _____
 - a. If "Yes" how many on-premise hours per month are services rendered? _____
 - b. If "No" is this facility served by a full-time dietitian?
Yes _____ No _____
3. Is this nursing home operated by a hospital or any other type of special patient institution? Yes _____ No _____
 - a. If "Yes" what type institution? _____
 - b. If "No" is it privately owned? Yes _____ No _____
4. What is the bed capacity of this facility? _____
5. What percent of your time is spent in administrative duties? _____
if less than 100 per cent, what other duties do you perform? _____
6. Indicate the number of years of formal education completed: (Circle the last year completed)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

7. List the national and state health related organizations of which you are a member:

[Questionnaire I to Administrators]
MODIFIED DELPHI SURVEY ROUND I

Check the bed capacities of the facilities that you presently serve.

1-25 _____	51-75 _____	101-125 _____	151 and above _____
26-50 _____	76-100 _____	126-150 _____	_____

Indicate whether you are presently performing the functions described below by placing an "X" in the appropriate column to the left of the statement. Rate each statement below, according to the given scale, as to how well your education and training prepared you to perform these functions, whether you are presently performing them or not.

RATING SCALE

- 5--Completely adequate
 4--Very adequate, very helpful, and could not easily have been improved
 3--Adequate, helpful, needed little improvement
 2--Somewhat inadequate, could have been improved considerably.
 1--Very inadequate, very little help

YES NO		5	4	3	2	1
	1. To evaluate and monitor foodservice systems.					
	2. To make recommendations for a level of foodservice operation that will provide nutritionally adequate quality food.					
	3. To evaluate dietetic personnel performances.					
	4. To give guidance for improving dietetic personnel performances at all levels.					
	5. To plan, organize, and conduct in-service personnel.					
	6. To assist in the development of budget proposals and recommend procedures for cost controls.					
	7. To assist in the planning of layout designs and determining the equipment requirements for a new or renovated foodservice facilities.					

YES NO	5	4	3	2	1
8. To recommend standards for sanitation and safety.					
9. To assist clients in regard to the selection and procurement of food.					
10. To consult with administrators about foodservice.					
11. To develop, maintain, and use pertinent record systems related to the needs of the organization and the consulting dietitian.					
12. To maintain effective verbal and written communication and public relations, inter- and intra-departmental.					
13. To develop menu patterns for all categories of patients in the facility.					
14. To interpret, evaluate, and utilize pertinent current research relating to nutritional care.					
15. To develop, use and evaluate education materials related to the services provided the patients.					
16. To assess, develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports.					
17. To consult with the health care team concerning the nutritional care of patients.					
18. To do administrative tasks effectively and efficiently.					
19. To do therapeutic tasks effectively and efficiently.					

MODIFIED DELPHI SURVEY ROUND I

Check the bed capacity of your facility.

1-25 _____	51-75 _____	101-125 _____	151 and above _____
26-50 _____	76-100 _____	126-150 _____	

Indicate whether your dietetic consultant is presently performing the functions described by placing an "X" in the appropriate column to the left of the statement. Rate according to the given scale how well you think your consultant performs each function marked "YES".

RATING SCALE

- 5—Completely adequate
- 4—Very adequate, cannot easily be improved
- 3—Adequate, needs little improvement
- 2—Somewhat inadequate, needs to be improved
- 1—Very inadequate

YES	NO		5	4	3	2	1
		1. Evaluates and monitors foodservice systems.					
		2. Makes recommendations for a level of food-service operation that will provide nutritionally adequate quality food.					
		3. Evaluates dietetic personnel performances.					
		4. Gives guidance for improving dietetic personnel performances at all levels.					
		5. Plans, organizes, and conducts inservice educational programs for foodservice personnel.					
		6. Assists in the development of budget proposals and recommends procedures for cost controls.					
		7. Assists in the planning of layout designs and determining the equipment requirements for a new or renovated foodservice facility.					
		8. Recommends standards for sanitation and safety.					

YES	NO	5	4	3	2	1
	9. Assists clients in regard to the selection and procurement of food.					
	10. Consults with administrator about foodservice.					
	11. Develops, maintains, and uses pertinent record systems, related to the needs of the organization and consulting dietitian.					
	12. Maintains effective verbal and written communication and public relations, inter- and intra-departmental.					
	13. Develops menu patterns for all categories of patients in the facility.					
	14. Interprets, evaluates, and utilizes pertinent current research relating to nutritional care.					
	15. Develops, uses, and evaluates education materials related to the services provided the patients.					
	16. Assesses, develops, implements, and evaluates nutritional care plans and provide for follow-up, including written reports.					
	17. Consults with the health care team concerning the nutritional care of patients.					
	18. Performs administrative tasks effectively and efficiently.					
	19. Performs therapeutic tasks effectively and efficiently.					

APPENDIX B
DELPHI ROUND II

[Sample Cover Letter to Dietitians]

Dear

We are now in Round II of the modified Delphi survey which is a part of a long-range project for evaluating how well dietetic education programs are preparing dietitians.

This round is designed to find out the opinions of two groups of experts (consulting dietitians and administrators) on the future educational requirements and responsibilities of the consulting dietitian to nursing homes. The opinions expressed in this round are very important to the formation of the questionnaire for Round III.

Because of the limited number of consulting dietitians in Tennessee, your participation is very important for the accuracy of the data obtained. Equally as important are your opinions about the statements found on the enclosed questionnaire. Please take a few minutes to make comments about the statements on the questionnaire and return in the self-addressed, stamped envelope attached by March 31, 1975 so that we may proceed with the formation of the questionnaire for Round III. You will receive the next round of the modified Delphi survey approximately April 16, 1975. If you did not return Round I questionnaires you may still participate in this round.

All answers are confidential and will be used in combination with those of other consultants and administrators to nursing homes.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Sample Cover Letter to Administrators]

Dear Administrator:

We are now in Round II of the modified Delphi survey which is a part of a long-range project of evaluating how well dietetic education programs are preparing dietitians.

This round is designed to find out the opinions of two groups of experts (consulting dietitians and administrators) on the future educational requirements and responsibilities of the consulting dietitian to nursing homes. The opinions expressed in this round are very important to the formation of the questionnaire for Round III.

Because we are surveying a limited number of nursing home administrators in the state your participation is very important for the accuracy of the data obtained. Equally as important are your opinions about the statements found on the enclosed questionnaire. Please take a few minutes to make comments about the statements on the questionnaire and return it in the self-addressed, stamped envelope attached by March 31, 1975 so that we may proceed with the formation of the questionnaire for Round III. You will receive the next round of the modified Delphi survey approximately April 16, 1975. If you did not return Round I questionnaires you may still participate in this round.

All answers are confidential and will be used in combination with those of other consultants and administrators to extended care facilities.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Questionnaire II to Dietitians and Administrators]
MODIFIED DELPHI SURVEY ROUND II

Check the bed capacity (s) of the facility (s) served.

1-25	51-75	101-125	151 and above
26-50	76-100	126-150	

Below is a list of possible FUTURE (next ten years) educational requirements and responsibilities of the consulting dietitian to nursing homes.

- a) Check the term that best describes your feelings about the accuracy of each statement.
- b) Please GIVE REASONS for your opinions about the statement in the space below it.
- c) Please feel free to add other FUTURE educational requirements and responsibilities of the consultant to nursing homes.

	Very Important	Important	Slightly Important	Unimportant
A. The future education of the consulting dietitian should include courses that will provide knowledge of:				
1. written and verbal communications				
2. management science and personnel management				
3. the principles of learning.				
4. the socio-cultural influences on food behavior.				
5. equipment, layout, and design engineering				
6. the concepts of microbiology, principles of sanitation and food safety, and the techniques for the inspection of food service units.				
7. the biological, chemical, and nutritional sciences.				

	Very Important	Important	Slightly Important	Unimportant
B. The future training of the consulting should include experiences in:				
1. the determination of and writing of policies and procedures				
2. the determination of and writing of nutritional care plans				
3. a small institution (nursing home or hospital)				
C. The continuing education of the consulting dietitian should include:				
1. short term university courses, correspondence courses, and workshops or seminars				
2. articles in journals and other professional publications that are geared to the needs of health care consultants-				
D. Consultants should be required to have two to five years of experience.				
E. Consulting dietitians in the future will:				
1. make recommendations for the planning of new or renovated foodservice units.				
2. confer with other members of the health team regarding the nutritional care of the patients.				
3. evaluate food service personnel and make recommendations for staffing, training, and development of personnel.				
4. recommend food specifications to the client or his designate				

	Very Important	Important	Slightly Important	Unimportant
5. recommend menus that will provide adequate quality food within the operational constraints of the facility.				
6. determine instructional objectives for the training of foodservice personnel				
7. develop, assist in implementation, and evaluate the effectiveness of record systems, related to the needs of the organization and the consultant				
8. identify areas for the foodservice staff that are sources for pathogenic organisms				
9. interpret and evaluate current research relating to nutritional care				
10. plan, implement, conduct, and evaluate personnel training.				
11. assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports				
12. assist the administrator or his designate with the budget for the foodservice unit				
13. write diet orders for patients and provide follow-up.				
14. determine objectives for patient instructions and classes				
15. recommend controls in the foodservice unit				
16. consult with the administrator about the foodservice unit through written and verbal communications.				
17. write policies and procedures for the foodservice unit				

18. train dietetic technician to make appropriate changes in menu items when necessary
19. train dietetic technician to make changes in nutritional care plans within constraints of the diet order when necessary.

Very Important
Important
Slightly Important
Unimportant

APPENDIX C
DELPHI ROUND III

[Sample Cover Letter to Dietitians]

Dear

We are now in the Final Round of the modified Delphi survey which is a part of a long-range project of evaluating how well dietetic education programs are preparing consulting dietitians.

In Round II of this survey, you were asked to rate the importance and give comments about statements describing possible future educational requirements, training and responsibilities of consulting dietitians to nursing homes within the next ten years. Your answers have provided us with much data to be used in planning educational programs for dietetic consultants in the future. All of the statements evaluated in the previous rounds were rated by a consensus of the panel of experts to be very important or important.

The purpose of this round of the modified Delphi survey is to have you rank in your order of priority the statements from Round II. This will enable educators of dietitians to incorporate in their programs courses and experiences that will satisfy those educational requirements, training and responsibilities that the practicing consulting dietitian to nursing homes and employers of such rated as having highest priorities.

Because of the limited number of consulting dietitians in the state, your participation is very important to the accuracy of the data obtained. If you did not participate in Round II we would appreciate your participation in this round.

All answers are confidential and will be used only in combination with those of other consultants and administrators to nursing homes. Copies of the final report will be available upon your written request.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Sample Cover Letter to Administrators]

Dear Administrator:

We are now in the Final Round of the modified Delphi survey which is a part of a long-range project of evaluating how well dietetic education programs are preparing consulting dietitians.

In Round II of this survey, you were asked to rate the importance and give comments about statements describing possible future educational requirements, training, and responsibilities of consulting dietitians to nursing homes within the next ten years. Your answers have provided us with much data to be used in planning educational programs for dietetic consultants in the future. All of the statements evaluated in the previous rounds were rated by a consensus of the panel of experts to be very important or important.

The purpose of this round of the modified Delphi survey is to have you rank in your order of priority the statements from Round II. This will enable educators of dietitians to incorporate in their programs courses and experiences that will satisfy those educational requirements, training and responsibilities that the practicing consulting dietitian to nursing homes and employers of such rated as having highest priorities.

Because we are surveying a limited number of licensed nursing homes in the state, your participation is very important to the accuracy of the data obtained. If you did not return the questionnaire for Round II, we would appreciate your participation in this round.

All answers are confidential and will be used only in combination with those other consultants and administrators to nursing homes. Copies of the final report will be available upon your written request.

Your assistance in this project is most appreciated.

Sincerely,

Erskine R. Smith, R.D.

[Questionnaire III to Dietitians and Administrators]
MODIFIED DELPHI SURVEY ROUND III

- A. Most colleges and universities that are responsible for the education and training of dietitians are seeking to provide their students with a good "well-rounded" general education to equip them to function effectively in a rapidly changing world, and to provide them with the skills and knowledge needed to perform as a dietitian. In Round II of the Modified Delphi Survey, all the statements concerning the future educational requirements and experiences for the consulting dietitian to nursing homes were rated as very important or important. To include all of them in the education and training of dietitians at the bachelor of science level would mean that dietitians would not receive a "well-rounded" general education, but one that is heavily slanted toward dietetics.

Rank the statements listed below according to their degree of priority for the education of and training of consulting dietitians to nursing homes. Please RANK ALL STATEMENTS. Write in the blank to the left of the statement the number from 1 to 13 that corresponds to your ranking for the statement. A ranking of 1 means that the statement has the highest priority; whereas, a ranking of 13 represents the lowest priority for inclusion in the training program.

The future education of the consulting dietitian should include courses that will provide knowledge of:

_____ written and verbal communications.

_____ management science and personnel management.

_____ the principles of learning.

_____ the sociocultural influences of food behavior.

_____ equipment, layout, and design engineering.

_____ the concepts of microbiology, principles of sanitation and food safety, and the techniques for the inspection of foodservice units.

_____ the biological, chemical, and nutritional sciences.

The future training of the consulting dietitian should include experiences in:

_____ the determination of and writing of policies and procedures.

_____ the determination of and writing of nutritional care plans.

_____ a small institution (nursing home or hospital)

The continuing education of the consulting dietitian should include:

_____ short term university courses, correspondence courses, and workshops or seminars.

_____ articles in journals and other professional publications that are geared to the needs of health care consultants.

_____ consultants should be required to have two to five years of experience.

- B. In Round II of the Modified Delphi Survey, the following statements describing future responsibilities of consulting dietitians to nursing homes were rated as being very important or important. Consultants are not full time dietitians for the facilities that they serve which makes it very difficult for them to perform all the responsibilities listed below. Rank the statements according to their degree of priority for the food service unit of your nursing home. Write in the blanks to the left of the statement the number from 1 to 19 that corresponds to your ranking for the statement. Do not use a number more than once. A ranking of 1 means that the statement has a highest priority; whereas, a ranking of 19 represents the lowest priority. Please rank all statements.

Consulting dietitians in the future will:

_____ make recommendations for the planning of new or renovated foodservice units.

_____ confer with other members of the health team regarding the nutritional care of the patients.

_____ evaluate food service personnel and make recommendations for staffing, training, and development of personnel.

_____ recommend food specifications to the client or his designate.

_____ recommend menus that will provide adequate quality food within the operational constraints of the facility.

_____ determine instructional objectives for the training of foodservice personnel.

_____ develop, assist in implementation, and evaluate the effectiveness of record systems, related to the needs of the organization and the consultant.

_____ identify areas for the foodservice staff that are sources for pathogenic organisms.

_____ interpret and evaluate current research relating to nutritional care.

_____ plan, implement, conduct, and evaluate personnel training.

_____ assess patients nutritional status and develop, implement, and evaluate nutritional care plans and provide for follow-up, including written reports.

_____ assist the administrator or his designate with the budget for the foodservice unit.

_____ write diet orders for patients and provide follow-up.

_____ determine objectives for patient instructions and classes.

_____ recommend controls in the foodservice unit.

_____ consult with the administrator about the foodservice unit through written and verbal communications.

_____ write policies and procedures for the foodservice unit.

_____ train dietetic technician to make appropriate changes in menu items when necessary.

_____ train dietetic technician to make changes in nutritional care plans within constraints of the diet order when necessary.

APPENDIX D

TABLE D-1

DIETITIANS' RESPONSES TO THE NUMBER OF YEARS
AS A DIETITIAN AND A CONSULTANT

Years as a Dietitian	Dietitians (Number)	Years as a Consultant	Dietitians (Number)
1 - 3	2	1 - 3	9
4 - 6	2	4 - 6	11
7 - 9	6	7 - 9	5
10 - 12	6	10 - 12	0
13 - 15	2	13 - 15	1
16 - 18	2	16 - 18	0
19 - 21	4	19 - 21	0
22 - 24	1	22 - 24	0
25 - 27	0	25 - 27	0
28 - 30	1	28 - 30	1
31 - 49	0		
50	1		

TABLE D-2
ADMINISTRATORS' YEARS OF
EDUCATION AND EXPERIENCE

Years of Education (Number)	Administrators (Number)	Years as an Administrators (Number)	Administrators (Number)
11	1	1 - 3	12
12	7	4 - 6	6
13	3	7 - 9	7
14	4	10 - 12	4
15	4	13 - 15	0
16	5	16 - 18	4
17	2	19 - 21	0
18	4	22 - 24	0
19	1	25 - 27	0
20	2	28 - 30	1
21	1		

TABLE D-3
OWNERSHIP OF NURSING HOMES

-
1. Is the Nursing home operated by a hospital or any other type of special patient institution?

yes
(number)
6

no
(number)
26

did not answer
(number)
2

- A. If yes, what type institution?

Hospital (number) 6

- B. If no, is it privately owned?

yes
(number)
20

no
(number)
5

did not answer
(number)
1

TABLE D-4

PERCENTAGE OF VERY IMPORTANT OR IMPORTANT RESPONSES FROM DIETITIANS AND ADMINISTRATORS
TO FUTURE TRAINING AND EXPERIENCES AND CONTINUING EDUCATION FOR CONSULTING DIETITIANS

Statement	Per Cent of Responses	
	Dietitians*	Administrators
The determination of and writing of policies and procedures.	96	80
The determination of and writing of nutritional care plans.	96	95
Short term university courses, correspondence courses, and workshops or seminars.	96	95
Articles in journals and other publications that are geared to the needs of health care consultants.	96	59
Experience in a small institution (nursing home or hospital).	73	95
Consultants should be required to have two to five years of experience.	73	70

*Indicating dietitians' order of priority

VITA

Erskine Ray Smith received a Bachelor of Science Degree with a major in Food Science and Dietetics from Middle Tennessee State University, Murfreesboro, Tennessee, in August, 1971.

He completed a dietetic internship at The Miami Valley Hospital, Dayton, Ohio, in August of 1972. The author is a Registered Dietitian. He worked two years as a clinical dietitian at Matthew Walker Health Center of Meharry Medical College, Nashville, Tennessee.

The author is a member of The American Dietetic Association and its state and district associations. He also holds membership with the Nutrition Today Society and Omicron Nu Honorary Society.

He will complete the requirements for the Master of Science Degree with a major in Food Systems Administration in August, 1975.

The author is married to the former Evelyn Marie Johnson of Nashville, Tennessee.