

AN ABSTRACT OF THE THESIS OF

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Title Professional Communications Between Physicians and Dietitians
as Reported by Dietitians

Abstract approved:

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Data regarding professional communications between physicians and dietitians in hospitals were obtained from results of 84 responses to a survey of all hospital dietitians (135) listed in the 1982 Oregon Dietetic Associations' Membership and Employment Directory. The data were gathered utilizing an initial mail-out questionnaire and a follow-up log booklet of communications with physicians kept during five working days. The population studied was characterized as being all women between the ages of 24 and 63, with more than 50 percent under the age of 32 years. Seventy-two percent of the dietitians worked full time and seventy percent were in the clinical division of practice in The American Dietetic Association. All of the dietitians were active members of The American Dietetic Association.

A data analysis indicated that 38% of the dietitians communicated with physicians less than every other day, and most frequently these communications were reported to be through patient charts in

reference to dietary prescriptions. Seventy-six percent of the dietitians indicated that 30% or less of the physicians on the medical staff consistently made referrals for nutrition counseling. The most frequently referring specialists included those in internal medicine, general practice and surgery. There appeared to be no specific age group of physicians referring more frequently than others. Sixty-five percent of the dietitians indicated that they felt that their communications with physicians were inadequate. Sixty percent of the dietitians felt that their nutrition expertise was utilized by physicians only "fairly well". Less than half of the dietitians participated in interdisciplinary medical team efforts. Significant correlations ($p < .05$) were found among various factors involving communications between dietitians and physicians when tested using chi square. In general, dietitians in hospitals with more than 200 beds more often considered their communications with physicians to be adequate than dietitians in smaller hospitals. A larger percentage of physicians (> 50%) in hospitals with more than 200 beds had a positive attitude about nutrition. More dietitians in larger hospitals participated in interdisciplinary medical team efforts than those in smaller hospitals. Of the dietitians indicating that their communications with physicians were adequate 61% felt their nutrition expertise was utilized "very well" and 50% had verbal contact with physicians from one to three times daily. When the physician was the initiator of communications, none of the dietitians felt that their nutrition expertise was utilized "very well". When the physician was

the initiator of communications, less than 10% of these were in reference to general nutrition information.

Recommendations from the study to improve communications between physicians and dietitians include required assertiveness training courses for dietitians, nutrition courses for physicians and a study of dietitians' utilization of time and their perceived priorities.

Professional Communications Between Physicians and
Dietitians as Reported by Dietitians

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PROFESSIONAL COMMUNICATIONS BETWEEN PHYSICIANS AND DIETITIANS AS REPORTED BY DIETITIANS

CHAPTER I

INTRODUCTION

In the formative years of the profession of dietetics, dietitians usually worked in remote areas of the hospital and had little communication with physicians. But the current image of the dietitian as a nutrition expert requires "direct and frequent interaction with physicians" (Schiller, 1973, p. 97).

Physicians have been noted to be unsure of the value of dietetic personnel, especially in direct services. They traditionally have seen the dietitian's unique contribution as the "knowledge of food, menu planning, and food habits, and the supplying of specific information relative to these" (Scialabba, 1975, p. 549).

There is evidence of a need for better understanding by the physician of what contributions the dietitian can make to health care teams (Spangler, Cederquist and Blackman, 1974; Schiller and Vivian, 1974a). Although physicians and medical students view nutrition as important in therapy, they are generally reluctant to accept that dietitians, rather than themselves, should give nutrition information and monitor the nutritional status of the patient (Schiller, 1973; Schiller and Vivian, 1974a; Cooper-Stevenson and Theologides, 1981). Modrow et al. (1980) suggested that this attitude may be a result of

the lack of appropriate sources to refer patients for nutrition counseling. In Modrow's study, physicians cited such constraints as lack of time, knowledge, appropriate trained staff or staff time, and lack of appropriate referral specialists which prevented them from providing more nutrition information to patients.

Surveys of physicians regarding their consultation with and referral to dietitians have revealed that most of them claim to utilize dietitians as resources for nutrition information, but there appears to be no data regarding dietitians' perspectives of the physicians' employment of their abilities as nutrition experts.

The goal of this research was to obtain, data regarding:

1. The number and frequency of professional communications between dietitians and physicians;
2. specific characteristics of communications between dietitians and physicians such as:
 - a) the initiator of the communications
 - b) the purpose of the communications
 - c) the type of contact made;
3. the percentage of available physicians regularly communicating with dietitians;
4. the specialty of physicians most often communicating with dietitians;
5. the age of physicians most often in contact with dietitians;

6. the relationships between various factors affecting communications between dietitians and physicians, such as hospital size, type of specialty group of physician available, percent of available physicians with a positive attitude about nutrition, participation of dietitians in interdisciplinary medical team efforts, age of available physicians and age of dietitians.

A survey instrument was designed and mailed to hospital dietitians.

CHAPTER II

REVIEW OF LITERATURE

Factors That Affect Professional Communications Between Dietitians and Physicians

Physicians' Attitudes Toward Dietitians' Contributions to the Health Care Team

Historically, the dietitian worked mainly in foodservice administration with little involvement in therapeutic nutrition. But the complexities of modern medicine and the demand for high quality nutrition care challenged the adequacy of the traditional functions of dietitians. The dietitian took the initiative to update her role and meet the challenge. However, there has been some ambiguity not only among physicians, but among dietitians as well, regarding the specific roles of dietitians in health care.

Schiller and Vivian (1974a) conducted a study to determine the level of agreement among physicians and dietitians on the activities, responsibilities and qualities which compose the role of the dietitian. The data were derived from a questionnaire consisting of 34 items which described the functions of dietitians, including conventional activities and high-level (decision-making) responsibilities. The questionnaires were mailed to 2000 physicians representing specialties particularly related to nutritional care, including general practice, internal medicine, obstetrics, pediatrics and surgery,

and also to 1000 clinical dietitians. Seven hundred twenty eight (36%) physicians returned the questionnaires and 701 (70%) dietitians returned them.

The responses to the question "should this item be a part of the dietitian's function?" on the questionnaire were grouped in three categories: "should", "may", and "should not" with a six point continuum. The findings of the survey showed that physicians agreed in their conception of the dietitians' role. Consensus (more than 60% agreement) was found for 28 (82%) of the 34 items. The physicians agreed that the dietitian should make a contribution to the health team (93%), especially in providing information for the physician to use in assessing the nutritional or dietary needs of the patient (87%). Other items often agreed to be functions of the dietitian included: motivates patients, gives dietary instructions and relates diet and disease. The six items not usually considered to be functions of the dietitian included: attends medical rounds, contributes to discussion during rounds, initiates dietary prescriptions, recommends diets after patient diagnosis, follows dietary orders without question or adaptation, and makes home visits after discharge from the hospital.

Physicians and dietitians together shared consensus for 27 of the items, although physicians generally had lower levels of consensus. They both agreed on the dietitians' provision of patient-related activities such as diet instruction and on providing dietary information to the physician. Dietitians had a higher level of

consensus on the decision-making roles in patient nutritional care than physicians.

The authors concluded that although the physicians who participated in this study were considered to have favorable opinions of dietitians, and although 93% of them stated that dietitians should contribute to the health team, the fact that they could not reach a consensus that dietitians should participate in the decision-making process indicated that "many physicians are convinced that the dietitian really should not function on the health team" (Schiller and Vivian, 1974a, p. 286).

The second section of this study was reported in another article in the same journal (Schiller and Vivian 1974b). The authors suggested that "lack of communication between dietitians and physicians has been considered an underlying cause of incongruity between the dietitians' concept of her role and her actual performance" (p. 288). However, they noted that when there has been open communication between dietitians and physicians, the dietitian has actively participated at a decision-making level in patients' nutritional care. The authors recommended that dietitians take action to improve activities by making meaningful dietary notations on medical charts and providing physicians and patients with reliable nutrition information which could improve "visibility" of the nutritional care of patients.

Spangler, Cederquist and Blackman (1974) analyzed physicians' attitudes on dietitians' contributions to health care teams. Questionnaires were mailed to chiefs of staff, hospital administrators,

directors of nursing, dietary department heads and dietitians of 236 Michigan hospitals listed by the Michigan Hospital Association. Results of questionnaires sent to chiefs of staff and 130 physicians were published. The 130 physicians were chosen during interviews of dietitians with the researchers. The dietitians were asked to list 49 physicians whom they thought considered the dietitians able to make a contribution to the health team, and 16 physicians whom they thought considered dietitians unable to contribute to the health team. In addition to these 65 physicians, 65 others were selected randomly from the American Medical directory, all in the same city as the first group of 65.

One hundred thirty five chiefs of staff (57%) returned the questionnaire. The authors noted that although chiefs of staff may not be representative of all physicians, the authority of their position may influence contributions that dietitians and the dietary department may make. Fifty-seven percent of the chiefs of staff believed that the dietary department is at an auxiliary level, primarily concerned with implementing orders of others, while 22% felt that the dietary department is a "contributing member of the health team involved at the decision-making level" and 18% considered the dietary department to be more a member of the administrative staff, being concerned with operational functions of the hospitals. Nine percent had no response. When asked what the chiefs of staff would consider the "ideal" function of the dietary department to be, 45% responded

it should be a contributing member of the health care team and 46% suggested it should be an auxiliary member.

The chiefs of staff most often thought that dietitians should have food-production related responsibilities rather than patient-related responsibilities. Nineteen percent of chiefs of staff indicated that they consulted with dietitians about dietary problems frequently, 64% occasionally, and 14% never, with 2% giving no response. The usual procedure used in ordering diets was by the physician from the diet manual (in 64% of the hospitals), but 53% of the chiefs of staff preferred that the diets be ordered by the physician after consulting with the dietitian. This was actually done in only 15% of the hospitals. Two percent of the hospitals surveyed had a procedure which involved diet prescription by the dietitian after reviewing patient cases.

Ninety-one of the 130 selected physicians (70%) returned their questionnaires. Most of those returning questionnaires were either general practitioners or specialists in internal medicine or general surgery. Forty-eight of these 91 physicians had been identified by the dietitians as having a positive attitude toward dietitians.

The physicians receiving a positive nomination from dietitians more frequently supported decision-making by dietitians in changing dietary orders than did those with a negative nomination. Sixty-nine percent of the positively responding physicians routinely used diet therapy as part of patient care. Forty percent of them felt that the ideal procedure for ordering diet changes was by physician, with the

dietitian modifying the diet, subject to approval by the physician. Only 19% agreed with the ordering of diets by the dietitian, subject to approval from the physician, and 17% felt that the diet should be ordered by the physician, after consulting with the dietitian. The table below summarizes these results and the results of those physicians negatively nominated by the dietitians.

Table I

Procedures for Ordering Diet Changes as Preferred by
Physicians Receiving Positive or Negative Nominations
from Dietitians^a

<u>Procedure for Ordering Diet Changes</u>	<u>Positively Nominated Physicians (N=48)</u>	<u>Negatively Nominated Physicians (N=11)</u>
By physician	8%	27%
By physician after consulting with dietitian	17	36
By physician with dietitian mod- ifying, subject to physician approval	40	18
By dietitian, subject to physi- cian approval	19	9
Other/no response	17	9

^a Spangler, A. A., D. C. Cederquist and C. A. Blackman. 1974. Physicians' attitudes on dietitians' contributions to health care team. *Journal of the American Dietetic Association*. 65:649.

Physicians, like chiefs of staff, thought the most important competencies dietitians needed were food-related. The authors noted that in half of the hospitals studied, dietitians had only limited influence on the quality of food served. Some unsolicited comments on the physicians' survey included: "I feel today's dietitian is nothing more than a high class cook. The future dietitian will be more of a chemist and physiologist", and "Dietitians should be available for clinical rounds and should be a part of all teaching rounds as well".

The results revealed that physicians and chiefs of staff were reluctant to assign decision-making in health care to dietary departments. The authors suggested that this reluctance may reflect physicians' feelings of not wanting to relinquish authority, or may indicate their lack of information about the potential contribution of dietitians.

Physicians' attitudes about dietitians' contributions to the health care team may be revealed in their nutrition counseling practices. Johnston and Schwartz (1978) considered physicians' opinions about nutrition and their counseling practices regarding nutrition. Their data were collected by means of a self-administered questionnaire which was mailed to all general practitioners, pediatricians and obstetricians registered with the British Columbia Medical Association. This included mailings to 1,981 physicians (1,753 general practitioners, 110 pediatricians and 118 obstetricians). The

respondents to the survey included 647 general practitioners (37%), 68 pediatricians (62%), and 49 obstetricians (42%).

The questionnaire measured the opinions of the physicians about nutrition and their nutrition counseling practices by utilizing twenty agree-disagree statements. The degree of confidence of answers given was measured by a scale of zero to seven, with zero being very doubtful and seven being very confident. The opinions about nutrition were measured by averaging the responses on the scale from zero to seven, with the highest score of seven indicating a positive attitude toward nutrition. The general practitioners had a mean score of 5.1 with a range of 3.0-6.4. The pediatricians' mean score was 5.7 with a range of 3.2-7.0. The obstetricians averaged 4.5 with a range of 2.4-6.3. The authors noted that although the responses reflected generally positive feelings toward nutrition, with pediatricians being most positive, many physicians lacked confidence in their opinions.

The physicians' nutrition counseling practices were rated on a three point scale with three being most positive toward nutrition counseling. The general practitioners scored 1.8 with a range of 1.0-2.6. The pediatricians scored 2.0 with a range of 1.6-2.5. The obstetricians scored 1.9 with a range of 1.1-2.5. In this study the pediatricians' counseling practices were most positive toward nutrition counseling.

Various resource materials which are tabulated below were reported to be used for nutrition information by these physicians.

Table II

Resource Materials Used by Physicians
for Nutrition Information^a

	General Practitioners	Obstetricians	Pediatricians
Professional journals	92%	94%	98%
Government publications	62	60	68
Books	56	57	74
Magazines	32	34	32
Television	13	11	18
Dietitians	43	43	66

^a Johnston, E. M. and N. E. Schwartz. 1978. Physicians' opinions and counseling practices in maternal and infant nutrition. *Journal of the American Dietetic Association*. 73:248.

Based on the findings of this survey, the authors recommend that: 1) Physicians should utilize the services of the dietitians in updating their nutrition counseling practices; 2) Continuing education programs on nutrition should be designed to have a greater appeal to physicians, especially general practitioners (These continuing education programs should place some emphasis on sources of reliable nutrition information) and 3) Nutrition should be included in the medical school curriculum in a manner which correlates with

practical application. Such courses should emphasize the role of nutrition in preventive medicine.

Other surveys report on physicians' attitudes about dietitians' contributions to the health care team and their utilization of dietitians in consultation. Cooper-Stevenson and Theologides (1981) showed that 51% of the physicians surveyed identified dietitians as a source of nutritional information. Ninety-three percent of both physicians and medical students reported that dietitians should be available for consultation in offices and hospital practices. Forty-four percent of these physicians reported referring their patients to a dietitian for counseling only "some of the time", while 23% did so "frequently" and 16% "never" did.

Krause and Fox (1977) reported that 88% of the physicians in their survey had access to clinical dietitians' services and 40% used them "frequently".

Modrow et al. (1980) reported that 90% of the physicians they surveyed had patients who would benefit from consultation with a dietitian. The preferred method of consultation from physician referral is tabulated below.

Stevens (1982) reported on a survey done by the Study Commission on Dietetics, Policy Research Corporation which showed that only 30% of the physicians who responded indicated that they would be "very likely" to refer patients to dietitians in private practice.

Table III

Preferred Method of Consultation from
Physician Referral to Dietitian^a

Method	Number of Physicians	Percent
Refer to dietitian in private practice	25	40%
Employ dietitian on my staff	6	10
Obtain a dietitian as a consultant to my practice, with fees paid by patients	15	24
Use hospital/clinic dietitian	4	6
Others	13	21

^a Modrow, C., C. Miles, S. Koerin, J. Dobek, P. Book and L. Honaker. 1980. Survey of physician and patient nutrition education needs. *Journal of the American Dietetic Association*. 77:687.

Physicians' Knowledge of and Training in Nutrition

Importance of nutrition knowledge to physicians. Health professionals, especially physicians, are often viewed by the public as a reliable source of nutrition information (Krause and Fox, 1977, Report of a Meeting, 1978, Modrow et al., 1980; Poplin, 1980). Accurate nutrition knowledge can be used by the physician in various aspects of medicine, including diagnosis of disease, rehabilitation from chronic illness, disease prevention, health promotion and patient education (Council on Foods and Nutrition, American Medical

Association, 1963; Flynn, Keithly and Colwill, 1974). White (1963) recognized the importance of nutrition in medical care some time ago. He stated that not only is it essential in the general nutrition education of patients, but it may be as important in the preventive medicine of the future as the knowledge of infectious diseases and immunization has been in the past.

More recently, Marsland, Wood and Mayo (1976) found in their survey that the 30 most frequently seen diagnoses in a study of family practices included such nutrition related conditions as hypertension, atherosclerosis, diabetes, obesity, pregnancy, congestive heart failure, and iron deficiency anemia, which all together accounted for more than 25% of visits to general practitioners. In 1977, the Senate Select Committee on Nutrition and Human Needs of the United States held hearings on Diet Related to Killer Diseases. The hearings were held as a forum to raise the American consciousness about health maintenance, to develop an understanding by the United States public about the importance of the relationship between diet and disease and to assess the need for a comprehensive health maintenance program to help save medical dollars. Diet can be associated with six of the ten leading causes of death in the United States - heart disease, cancer, diabetes, obesity, stroke and hypertension. The association of diet and killer diseases was found to be important enough that the Senate Select Committee developed Dietary Goals for the United States (1977) as a recommendation for health promotion.

Estimates by the United States Senate Select Committee on Nutrition indicate that an average 20% reduction in incidence, prevalence and costs in most disease categories could be seen with improved nutrition. With rising health care costs, as well as the need to supply the confused public with accurate nutrition information, it appears essential that physicians recognize the importance of adequate nutrition training.

Nutrition training in medical schools. Today's medical students are showing an increasing interest in nutrition education. Darby (1977) suggested several reasons for the current responsiveness. Medical students and young physicians are responding to society's needs and questions regarding nutrition. Physicians and surgeons are realizing that many new therapeutic advances in medicine have a potential that is limited by a failure to apply nutritional principles and there is a renewed appreciation within all specialities of medicine of the need to treat the patient rather than the disease.

Darby (1977) and Hodges (1977) reviewed the evolution of nutrition teaching in medical schools. Each noted that prior to the development of such medications as antibiotics, the majority of therapeutic agents were nutritional. The elimination of classical deficiency diseases, however, followed by advances in the treatment of infectious diseases with antibiotics, "crowded out" nutrition as a subject in medical schools. The "regrettable" result, according to Hodges, was that for a period of two decades following the mid 1950's, nutrition as a subject was ignored. Therefore, physicians

who graduated during that span of time, many of whom are currently established practicing physicians, graduated with little knowledge of the fundamental principles or the practical applications of nutrition in the care of their patients. "Even the recognition that there is such a thing as a science of nutrition seems to be a problem in the minds of many physicians" (Sebrell and VanItallie, 1962).

In 1958, High surveyed 60 medical schools regarding the nutrition training offered medical students. Although not recent data, physicians graduating before 1960 may be currently in practice and cannot be ignored. He mailed questionnaires to 66 medical schools in 32 states and received back 60 (91%) representing 29 states. This survey showed that the major responsibility of nutrition teaching was with biochemistry (95%), with some in internal medicine, pediatrics and physiology. The majority of those answering the questionnaire felt that nutrition should be integrated with other courses, rather than have specific courses in nutrition. Only 7% (four schools) required special texts for nutrition. For those schools requiring special courses in nutrition, the average amount of time spent on it was 21 clock hours. High concluded that "although the need for nutrition teaching in the standard medical curriculum is recognized, this survey revealed that in many instances, very little attention is directed to the organization and coordination of nutrition teaching", (p. 789).

Although the premise that nutrition should be an integral part of medical education has been voiced with increased concern in recent

years, medical schools have "lagged behind" in meeting this demand (Dunphy and Bratton, 1980). As long ago as 1963, the American Medical Associations Council on Foods and Nutrition issued a statement regarding the teaching of nutrition in medical schools:

In general, medical education and medical practices have not kept abreast of the tremendous advances in nutritional knowledge. . . There is inadequate recognition, support and attention given to this subject in medical schools, (p. 955).

A more recent survey by Wen, Weerasinghe and Dwyer (1973) showed that "the situation apparently has not changed since the last survey in 1958 (High)". These authors assessed the current situation of nutrition teaching in medical schools by reviewing the nutritional components of courses listed in the catalogs of American medical schools and by surveying questions in review books for medical licensure examination. Catalogs from 1969-72 from 94 medical schools were used in the survey. The descriptions of nutrition courses were analyzed. The authors noted that since catalogs may not accurately describe the courses, a survey such as this may under-estimate actual offerings. The survey revealed that 20% of the medical schools provided some nutrition education in the core curriculum, but only one-fifth of them--representing 4% of all medical schools--offered an independent course. Nutrition was most often included in descriptions of biochemistry courses. The second section of the survey involving examination of seven "review" books for nutrition questions revealed that the questions were not only quantitatively inadequate, but the "quality of nutrition questions was inferior". Most of the

questions about nutrition emphasized biochemistry. The review book with the highest percentage of nutrition questions asked had 41% as integrated questions, (found in the biochemistry section), while the book with the lowest percentage of nutrition questions had 1% all as integrated questions.

Cyborski (1977) utilized a quantitative survey to determine the status of nutrition teaching in United States medical schools. The quality of the nutrition education available to medical students at these schools was not analyzed, but this survey gave an indication of the formal nutrition education offered. She surveyed 114 accredited schools by sending a questionnaire to the dean of the school or to a member of the faculty previously identified as being involved in the teaching of nutrition. One-hundred and two of the institutions responded; 26 of the responses were from the dean's office and 76 were from the faculty involved with nutrition teaching. Six questions were asked regarding the availability of nutrition education at the schools. Nineteen percent of the respondents answered that they had a "required nutrition course". The courses varied in length from 10 to 40 hours, with an average of 20 hours. Topics covered included nutrition throughout the lifecycle, the Recommended Dietary Allowances and dietary assessment. Seventy-two of 102 schools offered elective nutrition courses, although it was reported that a "minority" of the student body usually chose such an option. Ninety-four of 99 responding to a question asking whether they had nutrition incorporated into another course answered affirmatively. It was most

often incorporated into biochemistry, physiology, pharmacology and medicine. Only one school reported that nutrition was not included in its curriculum in any form. Twenty-seven of the 98 schools responding to a question asking whether they had clerkships in nutrition answered that they did. Eighty-one of 101 respondents stated that they had opportunities to do nutrition research, either as a basic or clinical science. Thirty of 95 respondents to a question regarding whether post-graduate or continuing education studies in nutrition were offered answered "yes". Cyborski also had a section on the questionnaire requesting comments on the trends of nutrition teaching in each institution. One-third of the respondents expressed an increased interest in nutrition by students and faculty. She stated that this increased interest has resulted in more nutrition being offered by the institutions. The drawbacks to establishing more nutrition education included lack of funds, lack of clinicians with expertise in nutrition and lack of time in the curriculum. She concluded that although "much more work needs to be done in improving nutrition education in medical schools, about 75% of them have given evidence of becoming increasingly aware of this long-standing deficit."

Guthrie and Teply (1979) surveyed 248 medical students in two medical schools regarding their recommendations for nutrition education in medical schools. Fifty-three percent of the students were first and second year students and 47% were third and fourth year students. Eighteen percent of the respondents had taken a college

course in nutrition and stated that it would help them both personally and professionally. Thirty-nine percent did not plan to enroll in a nutrition course in medical school, with lack of course offered or schedule conflicts most often cited as reasons. Ninety-eight percent indicated they considered nutrition useful, important or essential as part of their medical training. Most of the students believed that a clinical nutritionist should teach the course. Most of them favored the multidisciplinary, integrated approach, rather than nutrition as a separate course. Eighty percent of them recommended premedical students enroll in nutrition courses and 62% recommended nutrition be taken both in pre-med and medical school. Forty-six percent said that nutrition should be a requirement, while 29% recommended it as an elective, and 25% stated it should be integrated into other medical courses.

Modrow et al. (1980) mailed a questionnaire developed by the Richmond, Virginia Dietetic Association to 256 practicing physicians in Richmond who were listed in the telephone directory. Sixty-three (25%) of the questionnaires were returned. One-half of the physicians believed themselves to be "moderately knowledgeable and able to meet most patients' nutrition education needs" while 32 (51%) of the respondents stated that they had been taught no nutrition in medical school. Thirteen respondents (21%) rated their medical school's nutrition education as good or excellent.

Cooper-Stevenson and Theologides (1981) revealed in the nutrition education needs section of their survey that 44% of the physi-

cians they surveyed, most of whom had been in practice 10 or more years, received no formal nutrition education in medical school. Thirty-six percent reported that nutrition was integrated with other subjects such as biochemistry.

Nutrition has a multidisciplinary character, which lends to the problem of its not being provided with an identity and status in the medical school curriculum (Sebrell and VanItallie, 1962). Because it is often integrated with other related courses, it may be touched upon "only briefly and in such a manner that it is uninteresting and irrelevant to the student, and too often. . . the emphasis is certainly not on human or clinical nutrition" (Vitale, 1977), p. 801. High (1958) and Phillips (1971) noted that where nutrition content is integrated into other subject matter, it apparently does not have much impact in the curriculum. Sandson (1977) observed that "each department teaches nutrition from its own narrow perspective--usually not in a comprehensive way--and often very highly focused and worst of all, unenthusiastically" (p. 822).

White (1963) recognized that nutrition may be taught in a "disorganized, haphazard" manner. He stated, however, that this may be more apparent than real, since students are probably being taught the principles of nutrition to a greater extent than the surveys have indicated, but in such a way that neither the medical student nor the faculty recognizes it as "nutrition". Although many feel that nutrition should be a separate course with its own identity, others feel that "diffuseness does describe the present trend in nutrition

and is reasonable and proper" (Griffith, 1967, p. 154). Nutrition is considered to be an integrating and coordinating science, not a basic science. Those with this belief suggest that nutrition should not be taught as a separate subject, but should be integrated with other courses only. Clinical nutritionists differ in opinion as to whether nutrition should be formalized as a separate subject or integrated. Because nutrition pervades all specialties, it may be difficult to establish it as a separate subject (Halstead and Halstead, 1976). Although the methods of introducing nutrition may be controversial, it is agreed that nutrition in medicine needs more recognition (Halstead and Halstead, 1976; Vitale, 1977).

A commentary in the Journal of the American Dietetic Association (Anon., 1974) suggested that it is the

purpose of nutritional training in medical schools to acquaint the physician with nutrition in such a way that he will appreciate its influence on his patients, and will know when to utilize the special skills of paramedical personnel who have greater depth of training in nutrition (p. 259).

Phillips (1971) and Schwam (1979) suggested that perhaps the average practicing physician should not be expected to have an extensive knowledge about nutrition or to do nutrition counseling, but instead should have a basic appreciation and knowledge of how to utilize the nutritionist for that purpose when he/she identifies and diagnoses conditions which require the intervention of the nutritionist.

Physicians' knowledge of nutrition. Although patients and allied health personnel, including nutritionists and dietitians,

expect the physician to have an adequate knowledge of nutrition (Phillips, 1971), the present state of medical school teaching in nutrition leaves much to be desired. Medical schools are graduating young physicians who are supposed to be able to prescribe therapeutic diets and give their patients accurate nutrition information, but due to insufficient time allotted to this study, they have not been taught the most basic facts of good nutrition (Sebrell and Van-Itallie, 1962; Flynn, Keithly and Colwill, 1974). Frankle (1976) reported that as a result, there are "gaps, inaccuracies and out of date theories which have led to blatant misinformation among health professionals" (p. 517). She stated further that, not surprisingly, the deficit of nutrition education that exists when the physician leaves medical school is not overcome in practice.

Medical students and practicing physicians have been found to depend largely on the non-professional literature for their knowledge. Podell, Gary and Keller (1975) surveyed the clinical nutrition knowledge of 36 practicing physicians, 48 third year medical students and 35 fourth year medical students at one school, and 44 third year students at a second medical school. Those surveyed represented 36%, 60%, 70% and 42%, respectively, of the total possible participants. They found that questions based on currently popular nutritional practices (such as the amount of ascorbic acid suggested to alleviate the common cold) were answered correctly (no known amount) most of the time, while questions pertaining to more

basic nutrition information (such as the Recommended Dietary Allowance for ascorbic acid) were not, which the authors contend suggests that medical students and physicians do learn about nutrition, but that their learning is highly dependent on the non-professional literature. The mail-out questionnaire used was divided into two parts, Part A (19 multiple choice questions) and Part B (20 multiple choice questions) for the subjects' convenience. The results showed that the average score for all groups was 58% for Part A and 41% for Part B, or 50% correct overall. Scores of over 70% were achieved by only 15 individuals (9% of total). Only 2 individuals (1% of total) scored 80% correct or better. The practicing physicians scored "modestly" lower than the medical students (44% versus 51%).

Nutrition knowledge of medical students has been assessed by others, as well. Phillips (1971) surveyed 254 second year medical students in the last part of their second semester in four New England medical schools. In the first school, School A, 89 students, or 79% of the total population were present in class and completed the survey. In School B, 60 students, or 83% completed the survey. In School C, 49 students, or 74% completed the survey and in School D, 86 students, or 98% completed the survey. They were given a multiple choice test which was based on basic nutrition information. The total possible score was 100. The results showed that in School A, the mean score was 40, in School B, the mean score was 48, in School C, the mean score was 47 and in School D, the mean score was 49. Phillips concluded that most medical students are not familiar

with the "basic concepts" of nutrition and that there is a need to increase the training given to the students during the first and second year of medical school.

Krause and Fox (1977) utilized a mail survey to determine the extent of nutritional knowledge and attitudes about nutrition of 1,350 physicians on the mailing list of the Nebraska Medical Association. Two hundred ninety two (22%) physicians returned the surveys. The mean age of those returning the survey was 48, with a range of 26 to 86 years. The average number of years in practice was 20, with a range of less than one year to 56 years. Forty-three percent of those responding were general practitioners, and less than 10% of each specialty area was represented. Sixty-two percent of the physicians received nutrition education integrated with other courses in medical school, 9% had specific nutrition coursework, 17% had a combination of the integration and specific coursework and 12% had no nutrition education in medical school. The knowledge section of the questionnaire consisting of 55 true/false questions with a "don't know" option indicated that 65% of the total responses were correct, 24% were incorrect and 11% were answered "don't know". The authors recommended the provision of post-graduate nutrition education for physicians.

Most physicians have high levels of "perceived" knowledge. Dugdale, Chandler and Baghurst (1979) surveyed 33 physicians, 63 medical students, 25 nurses and 29 theology students to determine their perceived knowledge as compared with their "actual" knowledge

of nutrition, measured by the number of questions answered correctly on a survey. To determine this, a questionnaire with 7 popular nutrition questions which could be answered "yes," "no," or "don't know" was utilized. An answer of yes or no indicated the subject had an opinion, or perceived knowledge about that particular question.

The results indicated that most people did have opinions about the questions asked. The physicians had a 96% level of perceived knowledge (they answered 96% of the questions asked with a yes or no). The medical students had an 89% level of perceived knowledge, while the nurses had 94% and the theology students had an 84% level. The accuracy of knowledge revealed a lack of training in nutrition for all groups. The physicians had a mean accuracy of knowledge of 79% with a range of 40-100. The medical students' mean accuracy of knowledge was 67%, range 33-100%, the nurses had a mean accuracy of knowledge of 52%, range 0-100%, and the theology students had a mean accuracy of knowledge of 35% with a range of 0-83%. The authors contend that this survey "does not inspire confidence in the nutritional advice given by these people".

In a study utilizing 143 medical students of the University of Minnesota Medical School and 72 practicing physicians attending a "Family Practice Review and Update" course sponsored by the University of Minnesota Department of Continuing Medical Education, Cooper-Stevenson and Theologides (1981) surveyed the knowledge, opinions and nutrition education needs of the subjects. The 143 medical students represented 54% of the total possible sample and the 72 physicians

represented 30% of the total possible sample. The knowledge section of the survey revealed that the mean score for the physicians was 55% with a range of 35-85%, while the medical students' average was 70% with a range of 0-100%. Eighty-one percent of the physicians and 61% of the medical students stated that there isn't enough practical information on nutrition in current medical journals, especially referring to the support of cancer patients. Ninety-six percent of the physicians would like a continuing education course in nutrition to increase their knowledge.

Dietitians' Potential for Contributions in Health Care

Nutrition has become an increasingly popular subject among the American public. Consumers are interested not only in combatting disease, but in promoting wellness through improved nutrition. Self-styled nutrition enthusiasts have written books with advice to the public, some of which has been harmful and even fatal. "With increased public awareness of nutrition, it is essential that the health professionals to whom a confused public turns for advice be prepared to offer sound, consistent information" (Guthrie and Teply, 1979, p. 1558).

Emphasis is being placed on the role of medical personnel in health maintenance. This has been documented in various reports as being the most cost-effective approach in the conquest of nutrition-related diseases (Young, 1983). Toplin (1980) noted that although the exact nature of links between nutrition and health remains

controversial, there is broad consensus that nutritional factors are related to health status. The linkages between nutrition factors and health status and nutrition intervention must be established and quantified to provide data regarding the cost/benefit analyses of nutrition programs. She noted that research focusing on the effectiveness of nutrition intervention is just beginning, but is very necessary.

One study which quantified the need for nutrition intervention was that of Walters, Onetto and Jerman (1972). They assessed the percentage of out-patients who required or needed nutritional counseling, whether or not dietary referrals were actually made by physicians. This was done at the Out-Patient Clinic of Cleveland Metropolitan General Hospital. There were over 200,000 patient visits per year at this clinic. The sample was chosen by using the 1971 clinic census and selecting a percentage of the total visits. A team of three dietitians compiled a list of factors affecting nutritional status. These factors were utilized in determining which patients could benefit from nutrition counseling. Factors used to determine this included obesity, allergies, medical conditions such as diabetes, hypertension, hepatic disorders, or gastrointestinal problems, and the patient's need for skills in meal planning and budgeting. These three dietitians screened all charts and made the decision as to whether nutrition consultation would be beneficial for each patient.

The data revealed that 114 (57%) of the 200 patients whose charts were screened had no apparent need for nutrition services. Eighty-six (43%) did show a need for such services. The authors noted that the latter percentage appears to be high for several reasons, including the fact that these were not physician referrals, but screenings by a team of dietitians who deemed nutrition counseling necessary. They contend, however, that this study shows that a significant percentage of ambulatory patients in an out-patient clinic do need nutritional services. They recommend not only that physicians refer patients with such a need, but that dietitians periodically screen charts for patients with a need for nutrition counseling.

A position paper on clinical dietetics (American Dietetic Association, 1982) stated that although nutritional care is provided for patients referred by physicians, it is the responsibility of the dietitian to search out other patients who may need nutrition care and diet counseling.

Dietitians' Training and Roles in Health Care

Minimum educational requirements for dietitians are established by The American Dietetic Association. Dietetic students are required to take courses in biochemistry, human physiology, organic chemistry, psychology, nutrition and nutrition in disease, as well as foods and foodservice systems management. Following completion of a bachelor's degree, dietitians gain professional experience, often by completing

an internship. The dietitian is then eligible to take the registration examination to become a registered dietitian.

These requirements prepare the dietitian to assure the availability and quality of all aspects of dietetic practice. The position paper on clinical dietetics by the American Dietetic Association (1982) classified dietitians' services into activities at five conceptual levels. The first level encompasses activities related to the direct care of patients/clients, such as establishing assessment criteria, constructing a written nutrition care plan, evaluating and documenting the effectiveness of nutrition intervention and providing for effective diet counseling of individuals and groups. The second level involves intra-professional responsibilities. This may include providing leadership in all aspects of nutrition care services, developing and maintaining standards of quality, applying current research, engaging in applied research and participating in educational programs for dietetic students. The third conceptual level includes inter-professional activities. These include contributing nutrition expertise to discussion of health care of patients/clients, participating in decision-making processes related to patient/client care, coordinating clinical dietetic activities with foodservice administration, providing nutrition education for health team members and participating in interdisciplinary evaluation studies. The fourth level involves intra-organizational relationships. This includes assuring that menus are nutritionally adequate, establishing procedures to ensure availability of special food

products, specifying procedures for foodservice and preparation, and implementing the functions of management. The fifth level involves the inter-organizational sphere. This includes identifying sources of and obtaining funds to support food and nutrition projects, specifying policies and procedures and consulting with elected officials about legislation affecting nutrition care services.

CHAPTER III

METHODS

Survey Methodology

A recommended procedure called "The Total Design Method" (TDM) which maximizes the probability of response in this type of survey (Dillman, 1978) was used to collect the data.

Data Source

The study population was selected from the November, 1982 Oregon Dietetic Association's Membership and Employment Directory. The Employment Directory lists dietitians under the headings of Business, College/ University, Consulting/Private Practice, County/State/-Federal, Hospital, Nursing/Retirement Home, Out-Patient Clinic, School Lunch Program, Research, and Other. A population of 135 dietitians was chosen, representative of 100% of those dietitians listed under the heading of Hospital. These dietitians have a high potential for communications with physicians. Only those listed in the Membership Directory as having an "Active" status in the American Dietetic Association were surveyed.

Survey Instrument

A mail questionnaire was developed with the assistance of the Survey Research Center at Oregon State University. The preliminary

draft was presented to graduate students and faculty members in the Department of Foods and Nutrition at Oregon State University, and was modified in accordance with suggestions given. The modified questionnaire was reviewed by the Survey Research Center and then pilot tested by a selected number of dietitians who had formerly worked in a hospital setting to ensure that the questions were understood as written.

The finalized questionnaire consisted of 25 questions in a booklet format, as recommended by Dillman (1978) (Appendix A). Eleven questions were fill in the blank, 12 were close-ended, four had an "other" option. Two questions were open-ended. Twenty-one were knowledge questions and four were opinion questions.

Since dietitians in administrative positions with primarily foodservices responsibilities would not have a high potential for communicating with physicians, the opening statement on the questionnaire suggested that these dietitians mark the appropriate box and return the questionnaire unanswered.

The questionnaire was then divided into three sections. The first section asked for general information about the type of physician available in the respondent's hospital. The second section was concerned with the dietitian's professional communications with physicians. The final section on the survey was concerning the dietitian's membership status in The American Dietetic Association and her place of employment.

The finalized questionnaire was mailed on Tuesday, March 8, 1983 to the study population with a cover letter written according to techniques described by Dillman (1978) and recommendations of the Survey Research Center at Oregon State University (Appendix B). Tuesday was chosen as the mail-out day because of recommendations by Dillman to avoid weekend buildup of mail, but to ensure delivery by the end of the week to the participant. Each questionnaire was numbered by hand on the front cover with an identification number which corresponded to a number on the mailing list of participants. Enclosed with each questionnaire was a stamped, self-addressed return envelope.

One week following the initial mailing, 100% of the survey population was mailed a printed postcard (Appendix C) thanking the participants for completing the questionnaire if they had done so and encouraging those who hadn't completed it yet to do so.

Three weeks after the original mailing on Thursday, March 31, 1983, a shorter cover letter (Appendix D) and a replacement questionnaire were mailed to those participants who had not yet mailed the questionnaire. To assure confidentiality, the respondents were identified only by the number printed on the cover of each questionnaire.

Approximately two weeks after the return of the initial questionnaire, 100% of the respondents who completed the questionnaire were sent a follow-up survey consisting of a log booklet,

instructions for completing it and a cover letter explaining the value of this additional data (Appendix E and Appendix F).

The log booklet was developed with assistance from faculty members and personnel from the Survey Research Center at Oregon State University. It was utilized as a documentation of communications with physicians over a period of five working days. The instructions on the first page of the booklet described the procedure to be used in keeping an accurate log, including documentation of the initiator of the contact, the type of contact made, such as by telephone or personal, the purpose of the contact and the specialty group of the physician. The booklet had one page for each day of work, with the pages divided into the four sections of information requested in the instructions. Enclosed with the log booklet was a stamped, addressed envelope for returning this.

A cut-off date for the inclusion of the initial survey in the final results was set at April 19, 1983. The log booklets were accepted until May 16, 1983.

Data Analysis

The completed questionnaires were coded for key punching according to directions given by personnel of the Survey Research Center at Oregon State University. The data were keypunched and then analyzed utilizing the computerized program Statistical Package for the Social Sciences (S.P.S.S.), 2nd ed. (Nie et al., 1975).

The initial analysis of the data was a frequency distribution for the answers to each question by the total population. Percentages were computed for each variable. From the tables developed by the frequency distribution analysis, responses to some questions were collapsed into categories of four to five groups for purposes of analysis. The figures reported on the following tables are adjusted frequencies so that missing cases were eliminated from the total responses.

Sets of relationships were then determined by utilizing the S.P.S.S. Crosstabs routine. Crosstabs produces a sequence of two-way tables showing the joint frequency distribution of two variables. Some of these tables were collapsed for purposes of analysis and Chi-squares were hand-calculated to determine significance.

Since the data were nominal, the most appropriate method of statistical analysis was chi square. Chi squares were calculated for each set of variables that were compared. Statistically significant relationships were determined at the five percent level.

The results of the log booklets were tabulated by hand and compared with the data from the initial questionnaire.

CHAPTER IV

RESULTS AND DISCUSSION

Response to Questionnaire and Log Booklets

Of the 135 questionnaires mailed, 118 or 87% were returned. This response rate is above the average response rate of 74% reported by Dillman (1978) when using the Total Design Method. Compared with other surveys of dietitians and physicians reported in the literature, the response to this survey was very favorable. Schiller and Vivian (1974a) reported a response rate of 70% of the dietitians surveyed and 36% of the physicians surveyed. Spangler, Cederquist and Blackman (1974) reported a response rate of 57% of the physicians surveyed. Krause and Fox (1977) reported a response rate of 22% of the physicians surveyed and Modrow et al. (1980), a response rate of 25% of the physicians surveyed.

Twenty-seven (23%) of the 118 returning the questionnaires marked the box indicating that their primary responsibility was food-service administration, and returned the questionnaires unanswered, as directed. These were not used in the analysis. Seven questionnaires were returned but not used for the following reasons: one survey was returned marked "addressee unknown", one was returned with a note that the dietitian had retired, and five surveys were returned after the deadline. The remaining 84 questionnaires were analyzed to

determine quantitative data about professional communications between dietitians and physicians and to determine specific characteristics of these communications, including the percentage of available physicians regularly communicating with dietitians, the specialty of physicians most often communicating with dietitians, the age of physicians most often in contact with dietitians, the initiator of the communications, the purpose of the communications and the type or method of contact made.

Forty-five or 54% of the log booklets sent to the 84 respondents were returned and tabulated by hand. The log booklets were utilized to compare the dietitians' perceptions of their communications with physicians, as reported in the initial questionnaire, with the actual communications they had with physicians in five specific working days. As with any survey utilizing a specific time period, it is important to note that the five specific working days may not be typical of the respondent.

The response rate of 54% for the log booklets was not as good as that of the initial questionnaire, probably for a variety of reasons. This follow-up was not mentioned in the initial cover letter or questionnaire since it was desirable to obtain independent information in the two surveys. It was time-consuming, since it was to be filled out over five working days. It may not have been as easily completed as the initial questionnaire, since it was generally open-ended. It is possible that the non-respondents felt that they

had already made a significant contribution to the study by completing the initial questionnaire, so the log booklet became an imposition on their time.

Description of Respondents and Their Place of Employment

Characteristics of Dietitians Responding. One hundred percent of the respondents were active members in The American Dietetic Association. All were women. Seventy-two percent of them (59) were in the Clinical division of practice in The American Dietetic Association, while nineteen percent (16) were in Management, four percent (3) were Consultants and two percent (2) each were in the division of Education and Community Dietetics. Two of the dietitians did not answer this question.

The age of the dietitians ranged from 24 to 63 years. Most of the dietitians were under the age of 31 years. Almost 27% (22) were from 24 to 28 years of age, 30% (25) were from 29 to 31 years, 19% (16) were from 32 to 48 years and 24% (20) were from 49 to 63 years. One respondent did not answer this question (Table IV).

About 72% (60) of the respondents worked full time or 40 hours per week. The remaining respondents worked between 4 and 38 hours per week.

Description of Hospitals where Dietitians were Employed. Hospital size was defined in two ways. One way was by the number of beds. Using this method, the hospitals were grouped into five categories

Table IV

Characteristics of Dietitians Responding
to Questionnaire

<u>Division of Practice in The American Dietetics Association</u>	<u>Dietitians Responding No.</u>	<u>Dietitians Responding %</u>
Clinical	59	72
Management	16	20
Consultants	3	4
Education	2	2
Community Dietetics	2	2
Missing Cases	2	-

<u>Age of Dietitians</u>	<u>Dietitians Responding No.</u>	<u>Dietitians Responding %</u>
<u>Years</u>		
24-28	22	27
29-31	25	30
32-48	16	19
49-63	20	24
Missing Cases	1	-

for analysis: from 0-50 beds (11 respondents or 14%), 51-100 beds (11 respondents or 14%), 101-200 beds (19 respondents or 23%), 201-400 beds (12 respondents or 15%), and 401 and more beds (28 respondents or 35%). This was not answered on three questionnaires. The number of physicians on the hospital medical staff can indicate hospital size as well; using this method, hospitals were categorized into another five groups. Group 1 included hospitals with 0-10 physicians (10 respondents or 13%). Group 2 had 11-50 physicians (20 respondents or 25%). Group 3 had 51-100 physicians (15 respondents or 19%). Group 4 had 101-200 physicians (17 respondents or 21%) and Group 5 had 200 or more physicians (17 respondents or 22%). Five dietitians did not answer this question (Table V).

Physicians' Referrals to Dietitians in Hospitals

Percentage of Physicians on Medical Staff Consistently Referring to Dietitians. The review of literature reveals the need for physicians to utilize the services of allied health professionals in the care of their patients, including the referral of patients to dietitians for nutrition counseling (Phillips, 1971; Anon., 1974; Schwam, 1979).

To help determine the utilization of dietitians' services by physicians, the percent of physicians on the medical staff consistently making referrals to dietitians for nutrition counseling was documented (Table VI).

Table V

Description of Hospital Size Where Dietitians Were
Employed According to Two Categories

	<u>Number of Beds</u>	<u>Dietitians Responding No.</u>	<u>Dietitians Responding %</u>
Group 1	0-50	11	14
Group 2	51-100	11	14
Group 3	101-200	19	23
Group 4	201-400	12	15
Group 5	400 +	28	35
	Missing Cases	3	-

	<u>Number of Physicians</u>	<u>Dietitians Responding No.</u>	<u>Dietitians Responding %</u>
Group 1	0-10	10	13
Group 2	11-50	20	25
Group 3	51-100	15	19
Group 4	101-200	17	21
Group 5	201 - +	17	22
	Missing Cases	5	-

Table VI

Percentage of Physicians on the Medical Staff
Consistently Making Referrals to Dietitians
as Reported by Dietitians

Physicians on Staff Percent	Dietitians Responding	
	No.	%
0-10	24	31
11-20	19	24
21-30	16	20
31-40	6	8
41-50	4	5
51-60	2	3
61-70	2	3
71-80	3	4
81-90	1	1
91-100	1	1
Missing Cases	6	-

Seventy-five percent of the dietitians stated that 30% or less of the available physicians on the medical staff consistently made referrals for nutrition counseling. Of these 75%, 41% stated that 10% or less of the available physicians consistently referred for nutrition counseling. The other 25% of the dietitians gave various percents of physician referrals from 31-100%. Only one dietitian stated that 100% of the available physicians consistently referred patients for nutrition counseling.

Specialty of Physicians Consistently Referring to Dietitians.

Of the physicians consistently making referrals for nutrition counseling, it was determined that the specialists most frequently making referrals were physicians in internal medicine, general practice and surgery. The responses to this question were widely varied, so were categorized into four groups according to percentage of referrals from a particular specialty (Table VII).

Forty-two percent of the dietitians reported that 26-50% of their referrals were from internists. About 41% of the dietitians reported that between 26 and 50% of their referrals were from general practitioners. Approximately 87% of the dietitians reported that from 1-25% of their referrals were from surgeons. Almost 96% of the dietitians reported that from 1-25% of their referrals were from pediatricians and about 79% of the dietitians reported that between 1 and 25% of their referrals were from obstetricians. Other specialists referring included gastroenterologists, nephrologists, oncologists and psychologists.

Table VII

Physician Referrals Grouped by Physician Specialty
as Reported by Dietitians

% of Physi- cians Reported as Referring	Dietitians Report- ing Referrals from General Prac- titioners		Dietitians Report- ing Referrals from Internists		Dietitians Report- ing Referrals from from Surgeons	
	No.	%	No.	%	No.	%
1-25	18	37	17	33	34	87
26-50	20	41	22	42	3	8
51-75	6	12	12	23	2	5
76-100	5	10	1	2	0	0
Missing Cases	35	-	32	-	45	-

% of Physicians Reported as Referring	Dietitians Reporting Referrals from Pediatricians		Dietitians Reporting Referrals from Obstetricians	
	No.	%	No.	%
1-25	22	96	19	79
26-50	1	4	5	21
51-75	0	0	0	0
76-100	0	0	0	0
Missing Cases	61	-	60	-

The results from the log booklets were similar to responses on the questionnaire. The logs revealed that 29% of the communications were with internists, 28% with general practitioners, 18% with surgeons, and six percent with cardiologists. The remaining communications were with other specialists less than four percent of the time. It appears that most communications with physicians were with internists and general practitioners. It is important to note that these are common specialty areas and most likely comprise a large percentage of the total medical staff. This may result in a larger number of communications with dietitians because of increased availability.

Age of Physicians Consistently Referring to Dietitians. As reported by the dietitians, there appears to be no specific age group referring more consistently than others. About 36% (30) stated that most of the physicians were younger than 40 years. Twenty-one percent (18) indicated that most of the physicians were older than forty years, thirty-four percent (29) indicated that no generalizations about age could be made, and eight percent (7) indicated generalizations other than the 40 year division.

New Referrals from Physicians to Dietitians in Five Days' Work. The largest percentage (22% or 17) of dietitians reported that they had five new patient referrals from physicians in five working days. About 16% (13) reported that they had ten new referrals in five

working days. About 11% (9) indicated that they had two new referrals in five working days.

Communications Between Physicians and Dietitians

Initiator of Communications. The initiator of the communications was revealed in a question with three possible answers: usually the physician, about equal, usually myself. The largest percentage (58% or 48) indicated that the initiation of communications was equally divided between physicians and dietitians. About 37% (31) reported that the dietitians themselves were most often the initiators. Only 5% (14) reported that the physicians were usually the initiators of the communications. One respondent did not answer this question.

The log booklets indicated that 56% of the communications were initiated by the dietitians and 43% were initiated by the physician. This supports the statement that the initiation of communications was about equally divided.

Type or Method of Communications. The type or method of communication was documented according to the frequency of the use of that type of communication (Table VIII).

Most frequently (83%), dietitians and physicians communicated through patient charts. The next most frequently used method of communication was in person (66%). Telephone and letters were used only "occasionally". Other methods of communication used and

Table VIII

Type of Communications Between Physicians
and Dietitians as Reported by Dietitians

<u>Type of Communication</u>	<u>Frequently</u>		<u>Occasionally</u>		<u>Never</u>	
	No.	%	No.	%	No.	%
By telephone	30	36	49	58	3	4
By letter/memo	11	13	43	51	25	29
In person	55	66	26	31	0	0
Through Patient Chart	70	83	9	11	2	2

Table IX

Frequency of Verbal Communications between Physicians
and Dietitians Reported by Dietitians

<u>Frequency (times daily)</u>	No.	%
3 or more	5	6
1-3	28	33
Every other day	19	23
Less than every other day	32	38
Never	0	0

reported by the dietitians included satellite referrals, written diet orders, meetings, committees and discussions at lunch.

The log booklet also indicated that the type of contact made was most often in the form of chart notations, while 38% were documented as "personal" or "in person" contacts. Thirteen percent of the communications were via telephone and 5% were by a written memo or note. Other types of contacts documented included group meetings, written consultations, beepers, rounds and via a nurse.

Frequency of Communications. The frequency of verbal communications is listed in Table IX. The largest percentage of dietitians, 38% (32) indicated that they had communications with physicians less than every other day. Thirty-three percent (28) stated that they communicated with physicians between one and three times daily. Twenty-three percent (19) indicated that they communicated verbally every other day. Only 6% (5) indicated that they communicated with physicians three or more times daily.

The log booklets revealed that 19% of the time there were no communications on a given day, 18% of the time there was one contact, 20% of the time there were two contacts, 18% of the time there were three contacts and 17% of the time there were four contacts. This reveals that 56% of the time there were between one and three contacts per day, which is more often than the dietitians originally indicated.

Length of Verbal Communications. The length of verbal communications was separated into three categories of less than 5 minutes, 5 to 15 minutes and more than 15 minutes. Sixty-nine percent (58) of the dietitians revealed that most of their communications lasted less than 5 minutes. Thirty percent (25) indicated most of these communications lasted between five and fifteen minutes and one percent (1) revealed the communications to last more than fifteen minutes.

Since most communications were less than 5 minutes in length, this might indicate that they were usually simple questions or confirmations of orders rather than in-depth conversations about nutrition. This may be to the dietitians' disadvantage, since the physicians would not have been exposed to the extent of the dietitian's knowledge about nutrition, so some physicians may not be aware of the dietitian's potential contribution to the health care team.

Purpose of Communications. The purpose of communications between physicians and dietitians was described in a series of three questions, including reference to the physicians' dietary prescriptions, reference to general nutrition information and reference to foodservice or food quality. Overall, 73% of the dietitians indicated that 50% or more of their communications with physicians were in reference to dietary prescriptions. About 40% (33) of the dietitians indicated that 90-100% of their communications with physicians were in reference to dietary prescriptions.

Fifty-five percent (45) of the dietitians indicated that 10% or less of their communications with physicians were regarding general nutrition information. Twenty-two percent (18) indicated that only five percent of their communications with physicians were about nutrition information. Some examples of these communications were described as requests for information about the Recommended Dietary Allowances, specific nutrients, tube feeding or total parenteral nutrition, caloric value of foods, use of nutrition supplements, weight loss diets or fads, nutrition and disease, nutrition assessment, sharing new information and drug-nutrient interactions.

The largest percentage (30% or 24) of dietitians responded that none of the communications they had with physicians were in reference to foodservice or food quality. The next largest percentage (22% or 18) indicated that 5% of their communications were regarding foodservice or food quality. About 90% of all dietitians indicated that 10% or less of their communications were about foodservice or food quality.

This is in contradiction with two surveys which indicated that physicians considered dietitians' primary functions to be related to foodservice. Spangler, Cederquist and Blackman (1974) showed that physicians and chiefs of staff in their survey responded that dietitians more frequently should have food-production related responsibilities rather than patient-related duties. Scialabba (1975) also noted in her survey that physicians felt that the dietitians'

contribution to the health care team was related to the knowledge of food, menu planning and related information.

The small percentage of communications regarding foodservice reported in this survey would indicate that physicians do not necessarily associate dietitians with foodservice alone.

In the log booklets, the stated purposes of the communications were widely varied. Most frequently (23% of the communications) the purpose was to clarify a diet order or to recommend a change in diet orders. Twenty percent were requesting diet instruction for a patient. Eleven percent were requests for a calorie count for a patient or a recommendation for a change in a patient's calorie level. About 14% were regarding information about total parenteral nutrition (TPN) or tube feeding formulas. Other purposes given at least five times included a discussion of the patient's progress, requests for nutrition assessment, requests for general nutrition information, discussion of supplementation for a patient, discussion of a special diet for a patient and a report of a patient's response to diet or diet instruction. Purposes documented less than five times included development of anorexia nervosa protocol, to accompany physician on rounds and a discussion of drug-nutrient interactions.

Dietitians' Opinions about the Adequacy of Communications. Sixty-five percent (53) of the dietitians reported that they considered communications between themselves and physicians to be inadequate. Only 35% of the dietitians indicated that these communications are adequate. Three dietitians did not answer this question.

An explanation for either answer (adequate or inadequate) was requested. Of those dietitians responding "inadequate," 49% gave no explanation. Of those dietitians giving an explanation of their inadequate communications, 39% indicated that their department was understaffed and that they had insufficient time to spend in communications with physicians. Twenty-seven percent stated that communications were inadequate because dietitians need to become more assertive and to initiate more communications with physicians about nutrition. Nineteen percent stated that physicians are the cause of inadequate communications because they do not recognize the importance of nutrition or dietitians in the care of their patients. Eight percent of the dietitians responded that dietitians need to increase their visibility so that physicians will become more aware of their presence and their potential contributions to the health care team. Six percent indicated that physicians feel "superior" and tend not to listen to dietitians' comments and advice. Only 2% indicated that dietitians need more exposure to physicians in order to become more comfortable with them to improve communications.

Physicians on Medical Staff with Positive Attitude
About Nutrition

The questionnaire asked for an approximate percentage of the total number of physicians in the hospital with a positive attitude about nutrition. The responses were categorized into four groups (See Table X). Most dietitians felt that a large percentage of the physicians in their hospital had a positive attitude about nutrition.

Table X

Percentage of Physicians on the Medical Staff
with a Positive Attitude about Nutrition
as Reported by Dietitians

<u>Physicians with a Positive Attitude About Nutrition</u>	<u>Dietitians Responding</u>	
	No.	%
%		
0-20	8	10
21-50	32	41
51-75	21	27
76-100	17	22

Table XI

Participation of Dietitians in Interdisciplinary
Medical Team Efforts

	<u>Dietitians Participating</u>		<u>Dietitians not Participating</u>		<u>No Answer Given</u>	
	No.	%	No.	%	No.	%
Nutrition support team	37	44	46	55	1	1
Discharge plan. Committee	29	35	36	43	19	23
TPN (total parenteral nutrition)	32	38	32	38	20	24
Inservice for physicians	28	33	36	43	22	24
Case studies	21	25	41	49	18	26
Rounds	33	39	33	39	18	21
Other	24	29	-	-	60	71

The largest percentage of dietitians (41%) indicated that between 21 and 50% of the physicians in their hospital had a positive attitude about nutrition. Almost 27% of them reported that between 51 and 75% of the physicians had a positive attitude, and 22% reported that 76-100% of the physicians had a positive attitude. A smaller percentage, 10% indicated that from 0-20% of the physicians had a positive attitude about nutrition. Six dietitians did not answer this question.

The findings of Krause and Fox (1977) in a survey of physicians supported the belief that physicians had a favorable attitude toward nutrition. In their survey, 100% of the physicians agreed with the statement "nutrition is an essential component of total health care" and 94% of the physicians agreed that "dietary treatment should be individualized for the patient."

Physicians' Use of Dietitians' Nutrition Expertise

Most of the respondents (61% or 51) in answer to the question "How well do you feel that your nutrition expertise is used in communications with physicians?" indicated it was used "fairly well." Thirty percent (25) indicated their nutrition expertise was used "very well" and 8% (7) revealed it was used "not too well". One respondent did not answer this question.

Participation of Dietitians in interdisciplinary Medical Team Efforts in the Hospital

Additional information about communications with physicians was

sought through questions about the dietitians' participation in interdisciplinary medical team efforts, including a nutrition support team, discharge planning committee, total parenteral nutrition (TPN), inservice education for physicians by dietitians, case studies and rounds. Forty-four percent (37) of the dietitians indicated that there was a nutrition support team at their hospital. One hundred percent of these revealed that there was at least one dietitian included on the team. One respondent did not answer this question.

It can be calculated from Table XI that 45% (29) of those answering the question stated that they participated in discharge planning committees. Fifty percent of those answering (32) revealed that they participated in total parenteral nutrition (TPN) in their hospitals. Forty-four percent of those answering the question (28) were involved in inservice education for physicians by dietitians. Thirty-four percent of those answering (21) participated in case studies and 50% of those answering (33) participated in rounds. There was a high number of dietitians not answering this question, which may indicate that a smaller percentage of the dietitians actually participated in these team efforts. Other communication efforts listed by the dietitians included diabetic committee, core staff meetings, treatment teams, rehabilitation teams, nursing inservice, Kardex rounds, quality assurance, infection committee and diet and nutrition committee (See Table XI).

With less than half of all dietitians being involved in interdisciplinary medical team efforts, it would appear that these

dietitians are not being regularly utilized as a part of the health care team. This is in agreement with much of the literature. Schiller and Vivian (1974b) concluded from the results of their survey that "many physicians are convinced that the dietitian really should not function on the health team" (p. 286). Spangler, Cederquist and Blackman (1974) also indicated that only 22% of the physicians they surveyed felt that the dietary department is a contributing member of the health team.

Charting by Dietitians. Ninety-six percent (80) of the dietitians indicated that they record in the same patient charts as physicians do. Only two respondents indicated that they record only in separate dietitians' notes. One respondent indicated she didn't record in charts at all, and one dietitian did not answer. This indicated that dietitians are highly visible through their chart notations.

Eighty percent (66) of the respondents reported that there is not a specific physician assigned as a liaison with the dietary department. Thirteen percent (11) reported that there is such a physician. Seven percent (6) responded "don't know" and one dietitian did not answer this question.

Interrelationships of Factors Involved in Communications

Utilizing the S.P.S.S. Crosstabs routine, statistically significant correlations ($p < .05$) were found among various factors involved with the communications between physicians and dietitians.

Cross Correlations Involving Size of Hospital

The size of hospital, measured by number of beds and number of physicians on the medical staff, was significantly correlated with many of the factors involved in communications. In general, the larger the hospital, the better the dietitians viewed the communications with physicians. Evidence for this is detailed in the following sections.

Utilization of Dietitians' Nutrition Expertise. A cross correlation between the number of beds in the hospital and how well the dietitians felt their nutrition expertise was utilized revealed that a higher percentage of dietitians in the hospitals with more than 200 beds felt their expertise was used "very well" to "fairly well" than those in hospitals with fewer than 200 beds. In the hospitals with 201-400 beds, 58% (7) of the respondents felt that their nutrition expertise was used "very well", while in hospitals with 401 or more beds, 44% (12) of the respondents felt their expertise was used "very well". In the hospitals with 200 or fewer beds, only 7% (0-50 beds), to 18% (51-100 beds) and 16% (101-200 beds) felt that their expertise was used "very well". Furthermore, in the hospitals with 200 or fewer beds, 14% (0-50 beds), 18% (51-100 beds) of the respondents felt that their expertise was used "not too well" while the hospitals with more than 200 beds had no respondents answering "not too well" (Table XII).

Table XII

Relationships between Physicians' Use of Dietitians' Nutrition Expertise and Size of Hospitals (No. of Beds) as Reported by Dietitians*

	<u>No. Beds</u>	<u>"Very Well"</u>		<u>"Fairly Well"</u>		<u>"Not Too Well"</u>		<u>Total No. Respondents</u>
		No.	%	No.	%	No.	%	
<u>Analysis:</u>								
	0-50	1	7	11	79	2	14	14
<u>Classified</u>	51-100	2	18	7	64	2	18	11
	101-200	3	16	13	68	3	16	19
	201-400	7	58	5	42	0	0	12
	401 +	12	44	15	56	0	0	27

(Chi square = 17.3)

	<u>No. Beds</u>	<u>"Very Well" - "Fairly Well"</u>		<u>"Not Too Well"</u>		<u>Total No. Respondents</u>
		No.	%	No.	%	
<u>Grouped Data</u>	0-200	37	84	7	15	44
	201- +	39	100	0	0	39

(Chi square = 4.9)

*
p < .05

Adequacy of Communications. Seventy-six percent of the dietitians in hospitals with 200 or fewer beds revealed that they felt their communications with physicians were inadequate, while only 54% of the dietitians in larger hospitals indicated that their communications were inadequate (Table XIII).

Results such as these must be analyzed to determine any bias that may skew the results. In Oregon, many of the respondents in larger hospitals are on the staff of a teaching hospital. Cross correlations indicate that in larger hospitals, dietitians participate in more multidisciplinary team efforts such as rounds and nutrition support teams than do those dietitians in smaller hospitals (Table XIV). In hospitals with 200 beds or less, 74% (23) of the dietitians indicated that they did not participate in rounds, while 71% (25) of the dietitians in hospitals with more than 200 beds indicated that they did participate in rounds. Seventy percent (30) of the dietitians in hospitals with 200 or fewer beds stated that they did not have a nutrition support team at their hospital, while 60% (24) of the dietitians from hospitals with more than 200 beds stated that they did have such a team at their hospital. Better communications, then, in larger hospitals, may be a result of these team efforts, possibly more often found in a teaching hospital.

Further analysis of communications was shown by the dietitians' explanation of their opinions about the adequacy of communications. The dietitians were asked to briefly explain their answer to the question "In your opinion, is the amount of communication about

Table XIII

Relationship between Adequacy of Communications between Physicians
and Dietitians and Hospital Size (No. of Beds)
as Reported by Dietitians*

<u>Analysis:</u>	<u>No. Beds</u>	<u>Adequate</u>		<u>Inadequate</u>		<u>Total No. Respondents</u>
		No.	%	No.	%	
Classified	0-50	5	36	9	64	14
	51-100	4	40	6	60	10
	101-200	1	6	17	94	18
	201-400	5	42	7	58	12
	401 +	13	48	14	52	27
(Chi square = 9.3)						
Grouped Data	0-200	10	24	32	76	42
	201 +	18	46	21		39

(Chi square = 5.8)

*
p < .05

Table XIV

Participation of Dietitians in Interdisciplinary Medical Team Efforts
and Its Relationship to Hospital Size (No. of Beds)
as Reported by Dietitians*

	No. Beds	Participation in Rounds				Participation in Nutrition Support Team			
		Dietitians Participating		Dietitians Not Participating		Dietitians Participating		Dietitians Not Participating	
<u>Analysis:</u>		No.	%	No.	%	No.	%	No.	%
	0-50	1	11	8	89	4	29	10	71
Classified	50-100	3	33	6	67	0	0	10	100
	101-200	4	31	9	69	9	47	10	53
	201-400	8	80	2	20	2	17	10	83
	401 +	17	68	8	32	22	79	6	21
	Missing Cases	18	-	-	-				
		(Chi square = 15.2)				(Chi square = 26.4)			
Grouped Data	0-200	8	26	23	74	13	30	30	70
	201 +	25	71	10	29	24	60	16	40
		(Chi square = 11.9)				(Chi square = 10.2)			

* p < .05

nutrition between yourself and physicians adequate or inadequate?" The answers to this were correlated with the size of hospital, defined by the number of beds in the hospital.

In hospitals with up to 50 beds, 64% (9) of the respondents indicated that communications were inadequate. Forty-three percent (6) of those giving an explanation stated it was because dietitians need to be more assertive and need to initiate and become involved in communications with physicians, and because the dietitians are understaffed and have insufficient time to communicate with physicians about nutrition. In hospitals with 51-100 beds, 60% (6) of the dietitians indicated that communications were inadequate. Twenty-seven percent (3) of those giving an explanation revealed it was because physicians failed to recognize the importance of nutrition and/or dietitians. In hospitals with 101-200 beds, 94% (17) of the dietitians indicated that communications were inadequate, 32% (6) of those giving an explanation noted it was because the dietetic department is understaffed. In hospitals with 201-400 beds, 42% (5) of the dietitians stated that communications were inadequate, 17% (2) of those giving an explanation indicated it was because the dietetic department was understaffed. Another 17% of the dietitians in hospitals of this size giving an explanation indicated that communications were adequate because physicians are beginning to recognize the importance of nutrition and are allowing dietitians to make decisions about the nutrition care of their patients. In hospitals with 401 and more beds, 52% (14) of the respondents indicated that communications were

inadequate, with 18% (5) of those giving an explanation noting that this was because the dietetic department was understaffed. Forty-eight percent (13) of the dietitians in this size hospital indicated that communications with physicians were adequate, with 26% (7) of those giving an explanation stating that this was because physicians are recognizing the importance of nutrition and are allowing dietitians to make decisions regarding the nutrition care of their patients as did the dietitians in hospitals with 201-400 beds (Table XV).

A large percentage of the respondents indicated that communications between themselves and physicians were inadequate because their department was understaffed. Staffing patterns of dietary departments in hospitals have been studied and reported in at least two recent surveys. East and Harger (1976) surveyed hospitals in Oregon and recommended that staffing patterns in larger hospitals include one administrative dietitian per 100 patients, two therapeutic dietitians per 100 patients, one teaching dietitian if appropriate for facility, and supportive personnel as needed. They recommended that smaller hospitals include one dietitian per 35 to 50 patients. Calvert, Parish and Oliver (1982) revealed in a survey of dietitians, directors of nursing and administrators in 106 acute-care hospitals evenly distributed across the United States that when asked if the present number of professionals in the dietetic department was adequate 56% of the chief dietitians, 59% of the directors of nursing and 92% of the hospital administrators said "yes". Almost all of

Table XV

Relationship between Explanations of Inadequate
Communications between Physicians and
Dietitians and Hospital Size
(Number of Beds)
as Reported by Dietitians

Size of Hospital Number of Beds	Reason Given by Largest Percentage of Dietitians for Inadequate Communications	Dietitians Giving this Explanation	
		No.	%
0-50	Dietitians need to be more assertive Dietetic Department understaffed	6	43
51-100	Physicians fail to recognize the impor- tance of nutrition and/or dietitians	3	27
101-200	Dietetic Department understaffed	6	32
201-400	Dietetic Department understaffed	2	17
401- +	Dietetic Department understaffed	5	18

those surveyed by Calvert et al. reported that the number of registered dietitians employed at their hospital will increase within the next three years, which, according to this survey, should improve physician-dietitian communications. It is not possible to accurately assess the ratio of dietitians to patients in this survey due to lack of information, but it is obvious that dietitians consider understaffing to be a major obstacle in their communications with physicians.

Schiller and Vivian (1974b) noted that when there has been open communication between dietitians and physicians, the dietitian has actively participated at a decision-making level in patient nutrition care. In this survey, the dietitians in larger hospitals have indicated that their communications are often adequate, and that they participate in decision-making responsibilities, which supports Schiller and Vivian's statement. Most often, surveys have shown that physicians have failed to delegate responsibility to dietitians for the nutrition care of their patients. Spangler, Cederquist and Blackman (1974) surveyed physicians, and the results of their survey revealed that physicians were reluctant to assign decision-making in health care to dietitians. The authors suggested that this may reflect the physicians' feelings of not wanting to relinquish authority or may indicate their lack of information about the potential contribution of dietitians. Krause and Fox (1977) revealed that physicians are reluctant to assign decision-making to dietitians. Only 37% of the physicians they surveyed agreed with the statement that "given the diagnosis, a dietitian is capable of prescribing the appropriate

dietary modifications required by any disease" (p. 609). Schiller and Vivian (1974a) found in their survey of physicians that less than half of the respondents agreed dietitians should have a role in decision-making, such as recommending diets (49% agreed) or initiating dietary prescriptions (26% agreed).

This survey would indicate that an increased communication between physicians and dietitians might lead to an improved role in decision-making in health care for dietitians.

Percentage of Physicians on Medical Staff of the Hospital with a Positive Attitude About Nutrition. The size of hospital, measured by number of beds is significantly correlated with the percentage of physicians on the medical staff with a positive attitude about nutrition. Sixty-eight percent (30) of the dietitians in hospitals with 200 or fewer beds indicated that 50% or less of the available physicians had a positive attitude about nutrition. This is in contrast with dietitians from hospitals with more than 200 beds, 60% (24) of whom indicated that more than 50% of the available physicians had a positive attitude about nutrition, with about 46% of these indicating that more than 75% of the available physicians had a positive attitude about nutrition (Table XVI).

Percentage of Physicians on Medical Staff of the Hospital Consistently Making Referrals to Dietitians. The size of hospital is significantly related to the percent of physicians on the medical staff consistently making referrals to dietitians for nutrition

Table XVI

Relationship between Percentage of Physicians on Medical Staff
with a Positive Attitude about Nutrition and Size of Hospital
(No. of Beds) as Reported by Dietitians*

	<u>No. Beds</u>	<u>0-20%</u>		<u>21-50%</u>		<u>51-75%</u>		<u>76-+</u>	
		No.	%	No.	%	No.	%	No.	%
<u>Analysis:</u>	0-50	1	7	7	50	1	7	5	36
Classified	51-100	1	9	4	36	5	46	1	9
	101-200	5	26	12	63	2	10	0	0
	201-400	0	0	3	25	5	42	4	33
	401 +	7	25	6	21	8	29	7	25

(Chi square = 25.8)

	<u>No. Beds</u>	<u>0-50%</u>		<u>51-100%</u>		<u>Total No. Responding</u>
		No.	%	No.	%	
Grouped Data	0-200	30	68	14	32	44
	200 +	16	40	24	60	40

(Chi square = 5.63)

* p < .05

counseling as well. Although a greater percentage of physicians in larger hospitals had a positive attitude about nutrition, a smaller number of them were reported by dietitians to refer for nutrition counseling. Fifty-seven percent (25) of the dietitians in hospitals with 200 or fewer beds stated that more than 20% of the available physicians consistently made referrals for nutrition counseling, while 75% (30) of the dietitians from hospitals with more than 200 beds stated that less than 20% of the available physicians made referrals for nutrition counseling, with 77% of these indicating that less than 10% of the available physicians consistently referred (Table XVII).

Similarly, in hospitals with 100 or fewer physicians on the medical staff, 58% (29) of the dietitians reported more than 20% of the available physicians consistently made referrals for nutrition counseling with the largest percentage (34%) being over 30% of the physicians. In hospitals with more than 100 physicians on the medical staff 82% (28) of the dietitians reported that less than 20% of the available physicians consistently made referrals for nutrition counseling, the largest percentage (50%) being less than 10% (See Table XVIII).

This may be a result of the fact that in a hospital with a larger medical staff, there is much more specialization of physicians. The results reported earlier in this paper indicate that the specialties of physicians most frequently referring include internists, general practitioners and surgeons. The percentage of

Table XVII

Relationship between Percentage of Physicians Consistently Making Referrals to Dietitians for Nutrition Counseling and Hospital Size (No. Beds) as Reported by Dietitians*

<u>Analysis:</u>	<u>No. Beds</u>	<u>0-10%</u>		<u>11-20%</u>		<u>21-30%</u>		<u>31-+%</u>	
		No.	%	No.	%	No.	%	No.	%
Classified	0-50	3	21	5	36	0	0	6	43
	51-100	1	9	2	18	3	27	5	45
	101-200	3	16	5	26	9	47	2	11
	201-400	10	83	2	17	0	0	0	0
	401 +	13	46	5	18	4	14	6	21

(Chi square = 38.1)

	<u>No. Beds</u>	<u>0-20%</u>		<u>21-+%</u>		<u>Total No. Dietitians Responding</u>
		No.	%	No.	%	
Grouped Data	0-200	19	43	25	57	44
	201 +	30	75	10	25	40

(Chi square = 7.5)

p < .05

Table XVIII

Relationship between Number of Physicians on the Medical Staff
and Percentage of Physicians Consistently Making Referrals
to Dietitians for Nutrition Counseling as Reported by Dietitians*

<u>Analysis:</u>	<u>No. Physicians on Staff</u>	<u>0-10%</u>		<u>11-20%</u>		<u>21-30%</u>		<u>31 +</u>		<u>Total No. Respondents</u>
		No.	%	No.	%	No.	%	No.	%	
Classified	0-10	5	33	4	27	1	7	5	33	15
	11-50	2	10	4	20	4	20	10	50	20
	51-100	3	20	3	20	7	47	2	13	15
	101-200	7	41	5	29	3	18	2	12	17
	201-500	13	76	3	18	1	6	0	0	17

(Chi square = 35.0)

	<u>No. Physicians on Staff</u>	<u>0-20%</u>		<u>21 + %</u>		<u>Total No. Respondents</u>
		No.	%	No.	%	
Grouped Data	0-100	21	42	29	58	50
	100 +	28	82	6	18	34

(Chi square = 11.9)

* p < .05

these specialties on the medical staff may be reduced at a larger hospital.

Cross Correlations Involving Adequacy of Communications

Dietitians were asked to indicate whether they considered their communications with physicians to be adequate or inadequate. The response to this question was significantly correlated with the physicians' utilization of dietitians' nutrition expertise, the percentage of available physicians with a positive attitude about nutrition, the frequency of verbal communications between physicians and dietitians, and dietitians' participation in interdisciplinary medical team efforts such as rounds and discharge planning committees. These correlations are discussed below.

Physicians' Utilization of Dietitians' Nutrition Expertise.

Physicians' utilization of dietitians' nutrition expertise was significantly correlated with the dietitians' opinions about the adequacy of communications with physicians.

Of the dietitians considering their communications with physicians to be adequate, 61% (17) felt that their nutrition expertise was utilized "very well" and 36% (10) felt it was used "fairly well". This is in contrast to the dietitians who considered their communications to be inadequate. Fifteen percent (8) of them felt that their nutrition expertise was "very well" utilized, while most of them (73% or 38) felt it was "fairly well" utilized. Twelve percent (6) felt it was utilized "not too well" (Table XIX).

Table XIX

Relationship between Physicians' Utilization of
Dietitians' Nutrition Expertise and
Dietitians' Opinion of the Adequacy
of Communications as Reported
by Dietitians*

<u>Adequacy of Communications</u>	<u>Percent and Number of Dietitians Responding</u>					
	<u>Utilization of Expertise</u>					
	<u>Very Well</u>		<u>Fairly Well</u>		<u>Not Too Well</u>	
	No.	%	No.	%	No.	%
Adequate	17	61	10	36	1	4
Inadequate	8	15	38	73	6	12

(Chi square = 17.5)

*p < .05

Percentage of Physicians with a Positive Attitude About Nutrition. The percentage of available physicians with a positive attitude about nutrition was statistically related to the dietitians' opinions about the adequacy of communications. The dietitians reported that when less than 50% of the physicians on the medical staff had a positive attitude about nutrition, the communications between physicians and themselves were most often inadequate, whereas when more than 50% of the physicians had a positive attitude about nutrition, the communications were more often adequate (See Table XX).

Frequency of Verbal Communications. The frequency of communications is significantly correlated with the adequacy of communications. Those dietitians with more frequent verbal contact felt that their communications were adequate. Fifty percent of the dietitians stating that their communications were adequate had verbal contact from one to three times daily, 53% (28) of the dietitians indicating that their communications with physicians were inadequate had verbal contact with physicians less than every other day (See Table XXI).

Dietitians' Participation in Interdisciplinary Medical Team Efforts. The dietitians participating in interdisciplinary medical team efforts more often considered communications to be adequate than those who didn't participate in this type of activity. Seventy-four percent (17) of the dietitians who participated in rounds indicated that their communications with physicians were adequate, while 64% (27) of the dietitians who did not participate in rounds indicated

Table XX

Relationship between Percentage of Available Physicians
With a Positive Attitude about Nutrition and Adequacy
of Communications as Reported by Dietitians*

Communications	<u>Physicians with a Positive Attitude</u>								<u>Total No. Respondents</u>
	<u>0-20%</u>		<u>21-50%</u>		<u>51-75%</u>		<u>76+ %</u>		
	No.	%	No.	%	No.	%	No.	%	
Adequate	4	14	5	18	8	29	11	39	28
Inadequate	9	17	26	49	12	23	6	11	53

(Chi square = 11.8)

*
p < .05

Table XXI

Relationship between Frequency of Verbal Contact
with Physicians and Adequacy of Nutrition
Communications as Reported by Dietitians*

Communications	<u>Frequency of Communications</u>							
	<u>3 + Daily</u>		<u>1-3 Times Daily</u>		<u>Every Other Day</u>		<u>Less</u>	
	No.	%	No.	%	No.	%	No.	%
Adequate	4	14	14	50	6	21	4	14
Inadequate	1	2	12	23	12	23	28	53

(Chi square = 15.7)

*
p < .05

that their communications were inadequate. Sixty-three percent (12) of the dietitians who participated in discharge planning for patients stated that communications were adequate, while 66% (29) of the dietitians not participating in discharge planning stated that communications were inadequate (Table XXII).

Cross Correlations Involving the Initiator of Communications

The initiator of communications between dietitians and physicians was significantly correlated with physicians' utilization of dietitians' nutrition expertise and the purpose of communications.

Physicians' Utilization of Dietitians' Nutrition Expertise. A significant correlation can be made between the physicians' utilization of dietitians' expertise and the initiator of communications. Most of the dietitians felt that when they initiated communications, their expertise was better utilized than when the physician initiated the communications. When the physician was the initiator, 100% (4) of the dietitians indicated that their expertise was utilized "fairly well" (50%) or "not too well" (50%). However, when the dietitian was the initiator of the communications, 65% (20) stated that her expertise was utilized "fairly well" and 23% (7) stated it was used "very well" (Table XXIII). This may indicate that dietitians initiate communications to give nutrition information to physicians, but physicians are not necessarily requesting information from the dietitians. This is supported by the fact that the purpose of the

Table XXII

Relationship between Dietitians' Opinion of Adequacy of Communications with Physicians and Dietitians' Participation in Interdisciplinary Medical Team Efforts*

<u>Adequacy of Communications</u>	<u>Dietitians' Participation in Rounds</u>			
	<u>Dietitians Participating</u>		<u>Dietitians Not Participating</u>	
	No.	%	No.	%
Adequate	17	74	6	26
Inadequate	15	36	27	64

(Chi square = 7.2)

<u>Adequacy of Communications</u>	<u>Dietitians' Participation in Discharge Planning Committees</u>			
	<u>Dietitians Participating</u>		<u>Dietitians Not Participating</u>	
	No.	%	No.	%
Adequate	12	63	7	37
Inadequate	15	34	29	66

(Chi square = 3.5)

*p < .05

Table XXIII

Relationship between Initiator of Communications
between Physicians and Dietitians and
Physicians' Utilization of Dietitians'
Nutrition Expertise as Reported by Dietitians*

<u>Initiator of Communications</u>	Number and Percent of Dietitians Responding					
	<u>Utilization of Expertise</u>					
	<u>Very Well</u>		<u>Fairly Well</u>		<u>Not too Well</u>	
	No.	%	No.	%	No.	%
Physicians	0	0	2	50	2	50
About Equal	18	38	28	60	1	2
Dietitians	7	23	20	65	4	13

(Chi square = 13.9)

* p < .05

communication varied with the initiator of communications. When the physician was the initiator of communications, 100% of the dietitians revealed that less than 10% of these were in reference to general nutrition information, but when the dietitian initiated the communications, up to 20% of them were in reference to general nutrition information. One hundred percent (4) of the dietitians indicated that when the physician was the initiator of communication, more than 75% of the communications were about dietary prescriptions. Only 74% (23) of the dietitians stated that when the dietitian was the initiator more than 75% of the communications were about dietary prescriptions (Table XXIV).

Cross Correlations Involving Dietitians' Age

Adequacy of Communications. The age of the dietitian responding to the questionnaire was significantly correlated with her opinion of the adequacy of her communications with physicians and how well she felt her nutrition expertise was utilized.

The dietitians were asked "In your opinion, is the amount of communication about nutrition between yourself and physicians adequate or inadequate?" and "Briefly explain either answer, please." Most dietitians (52% or 12) between the ages of 24 and 28 giving an explanation indicated that communications were inadequate because dietitians needed to be more assertive and to initiate and become involved in communications with physicians and also needed to increase their visibility. The largest percentage of dietitians

Table XXIV

Relationship between Initiator of Communications
between Physicians and Dietitians and Purpose of
Communications as Reported by Dietitians*

Purpose of Communications: General Nutrition Information

<u>Initiator</u>	<u>0-5%</u>		<u>6-10%</u>		<u>11-20%</u>		<u>21-50%</u>		<u>51-100%</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Physician	2	50	2	50	0	0	0	0	0	0
About Equal	15	31	8	17	7	15	13	27	5	10
Dietitian	9	29	10	32	10	32	2	7	0	0

(Chi square = 16.1)

Purpose of Communications: Dietary Orders or Prescriptions

<u>Initiator</u>	<u>0-25%</u>		<u>26-50%</u>		<u>51-75%</u>		<u>76 - 100%</u>	
	No.	%	No.	%	No.	%	No.	%
Physician	0	0	0	0	0	0	4	100
About Equal	8	17	12	25	7	15	28	44
Dietitian	1	3	2	7	5	16	23	74

(Chi square = 13.1)

* p < .05

between the ages of 29 and 31 giving an explanation (38% or 8) indicated that communications were inadequate because the dietitians were understaffed and had no time to communicate with physicians about nutrition. The largest percentage of dietitians between the ages of 32 and 48 giving an explanation (25% or 5) indicated that communications were inadequate because physicians need to recognize the importance of nutrition in the care of their patients. The largest percentage of dietitians older than 49 years giving an explanation (25% or 5) indicated that communications were adequate because physicians are beginning to recognize the importance of nutrition and are allowing dietitians to make decisions regarding the nutritional care of their patients. It is possible that the older dietitians have seen a greater improvement in physicians' attitudes about nutrition than the younger dietitians and consider communications to be adequate because of this improvement.

Physicians' Utilization of Dietitians' Nutrition Expertise. Another factor involved in the communication between physicians and dietitians is significantly correlated with the age of the dietitian. Dietitians over the age of 31 years felt that their nutrition expertise was used "fairly well" to "very well". A larger percentage of the dietitians under the age of 31 years felt that their knowledge was used "fairly well" to "not too well".

Interrelationships Found Not to be Significant

Relationships between some factors involved in communications

Table XXV

Relationship between Dietitians' Age and Physicians'
Use of Dietitians' Nutrition Expertise
as Reported by Dietitians*

Dietitians' Age	Use of Expertise Very Well		Fairly Well		Not Too Well		Total No. Respondents	
	No.	%	No.	%	No.	%	No.	%
24-28	3	13	20	87	0	0	23	
29-31	6	29	9	43	6	29	21	
32-48	7	35	13	65	0	0	20	
40+	9	47	9	47	1	5	19	

(Chi square = 22.5)

*
p < .05

between physicians and dietitians were not significantly correlated. The size of hospital, measured by the number of beds and the number of physicians on the medical staff, was not significantly correlated with the type or method of communication utilized. The size of hospital was not significantly correlated with the frequency of verbal communications between physicians and dietitians. Neither was the size of hospital significantly correlated with the initiator of communications or the purpose of communications.

The initiator of communications between physicians and dietitians was not significantly related to the type of communication, the frequency of verbal communications or the dietitians' opinions about the adequacy of communications.

An analysis of the dietitians' responses did not indicate a significant relationship between their opinions about the adequacy of communications and the purpose of communications or the initiator of communications.

The age of the dietitians responding was not significantly correlated with the type or method of communications, the purpose of communications or the frequency of verbal communications.

Limitations of this Survey

In any survey, there are limitations which may have some effect on the data received and analyzed. An important limitation of this survey was the size of the study population. Although 100% of the dietitians in hospitals in Oregon listed in the November 1982

Dietetic Association Membership and Employment Directory were surveyed, the total population size was only 135 dietitians. The excellent response rate of 87% minimized the importance of this limitation. A similar survey done regionally or nationally might give data which would increase the significance of this survey.

Another limitation that must be noted is the fact that not all dietitians in hospitals in the state of Oregon are members of the Oregon Dietetic Association (ODA) and are not listed in the ODA Membership and Employment Directory. These dietitians were not surveyed. Further, although the directory used was the most recent directory published (November 1982), four months had elapsed between the time it was published and the time the initial survey was sent, so the employment directory and membership list may not have been completely accurate.

Finally, a limitation of the survey itself was noted during the data analysis. An important question, "How many dietitians are on your hospital staff?" was not asked. This would have given information regarding the dietitian to patient ratio as well as the dietitian to physician ratio which would have been useful in determining workload. The answers to this may have led to some further interesting data for analysis.

Recommendations to Improve Communications Between Physicians and Dietitians

Sixty-five percent of the dietitians responding to the questionnaire indicated that communications between themselves and

physicians were inadequate. Many of them gave suggestions for improving these communications in space left on the last page of the questionnaire encouraging open comments.

One dietitian stated that it is important for dietitians to be more assertive. "I feel dietitians old and young have to be aggressive and yet understanding and tolerant. The doctors are not the enemy, yet we must show our credibility by keeping up, by constantly challenging ourselves. Sometimes we need to take the first step in communications and back it up with knowledge." Another dietitian suggested "Use the 'soft sell' approach, but be very visible. We will get much farther in the long run." Similarly, another dietitian stated that "Method of approach has a great deal to do with how anyone accepts new information. Timing has much to do with it--being concise is important when dealing with busy people and I consider myself lucky to work with a group of extremely human physicians. They treat me as the expert in my field, therefore communication is less a challenge."

Considering these suggestions, it is possible that assertiveness training courses for dietitians would help to improve communications between dietitians and physicians. These courses for dietitians in their undergraduate program would help to improve communications by making the dietitian more aware of the importance of her contribution to the health team and her position on the health team with respect to physicians.

Considering the high percentage of dietitians indicating that they had insufficient time to spend in communications with physicians, an evaluation of dietitians' utilization of time and their perceived priorities would be helpful in assessing methods of improving communications between physicians and dietitians.

A required nutrition course for physicians that includes a description of the practice of dietetics and the role of the dietitian in the care of their patients and the dietitians' contribution to the health care team. Dietitians have noted a change in physicians' attitudes over the years. One dietitian commented, "Physicians are getting more and more to recognize dietitians. They do ask advice--there seems to be an increase in interest in nutrition as patients are requesting this information." Another dietitian stated that "Our medical staff is relatively young. I have found that they are, for the most part, open to advice and often leave nutrition-related decisions up to me. They would, I'm sure, be open to more communications should I decide to make that a top priority."

CHAPTER V

SUMMARY AND CONCLUSIONS

Data regarding professional communications between physicians and dietitians in hospitals were obtained from results of 84 responses to a survey of all hospital dietitians (135) listed in the 1982 Oregon Dietetic Associations' Membership and Employment Directory. The data were gathered utilizing an initial mail-out questionnaire and a follow up log booklet of communications with physicians kept during five working days.

The population studied was characterized as being all women, between the ages of 24 and 63, with more than 50 percent under the age of 32 years. Seventy-two percent of the dietitians worked full time and seventy percent were in the Clinical division of practice in The American Dietetic Association. All of the dietitians were active members of The American Dietetic Association.

Most frequently, physicians and dietitians were reported to communicate through patient charts. The next most frequently used method of communication was in person. Telephone and letters were used "occasionally". Approximately 38% of the dietitians indicated they communicated verbally with physicians less than every other day while 33% stated that they communicated with physicians between one and three times daily. Twenty-three percent indicated that they communicated verbally every other day. Sixty-nine percent of the

dietitians indicated that most of their verbal communications lasted less than five minutes.

The initiator of communications was most frequently reported by the dietitians to be equally divided between physicians and dietitians. Approximately 73% of the dietitians indicated that 50% or more of their communications with physicians were in reference to his/her dietary prescriptions, with 39% of the dietitians stating that 90-100% of the communications were regarding dietary prescriptions. About 83% of the dietitians stated that 25% or less of their communications were about general nutrition information, with most dietitians stating that 10% or less of their communications were regarding general nutrition information. About 90% of all dietitians indicated that 10% or less of their communications with physicians were about foodservice or food quality.

Approximately 76% of the dietitians stated that 30% or less of the physicians on the medical staff consistently made referrals for nutrition counseling. Of the physicians consistently making referrals, the most frequently referring specialists included those in internal medicine, general practice and surgery. There appeared to be no specific age group of physicians referring more consistently than others.

Approximately 65% of the dietitians indicated that they felt that their communications with physicians were inadequate. Most of the dietitians (60%) felt that their nutrition expertise was utilized by physicians "fairly well". Less than half of the responding

dietitians participated in interdisciplinary medical team efforts, such as nutrition support teams, rounds and case studies.

Significant correlations ($p > .05$) were found among various factors involving communications between dietitians and physicians when tested using chi square. The size of hospital, measured by number of beds and number of physicians on the medical staff, was significantly correlated with the dietitians' opinions regarding the physicians' utilization of their nutrition expertise. None of the dietitians in hospitals with more than 200 beds indicated that their expertise was utilized "not too well" while 15% of the dietitians in smaller hospitals considered their expertise to be utilized "not too well". The adequacy of communications between physicians and dietitians was significantly correlated with the size of hospital, as well. About 76% of the dietitians in hospitals with 200 or fewer beds revealed that they felt their communications with physicians were inadequate, while only 54% of the dietitians in larger hospitals indicated that their communications were inadequate. The percentage of physicians on the medical staff with a positive attitude about nutrition was significantly correlated with the size of hospital. Sixty-eight percent of the dietitians in hospitals with 200 or fewer beds indicated that 50% or less of the available physicians had a positive attitude about nutrition. Sixty percent of the dietitians from hospitals with more than 200 beds indicated that more than 50% of the available physicians had a positive attitude about nutrition. The percent of physicians on the medical staff consistently making referrals for

nutrition counseling was significantly correlated with the size of hospital. Almost 57% of the dietitians in hospitals with 200 or fewer beds stated that more than 20% of the available physicians consistently made referrals for nutrition counseling, while 75% of the dietitians from hospitals with more than 200 beds stated that fewer than 20% of the available physicians made referrals for nutrition counseling. The number of dietitians participating in interdisciplinary medical team efforts was also significantly correlated with the size of hospital. In hospitals with less than 200 beds, 74% of the dietitians indicated that they did not participate in rounds and 70% did not participate in nutrition support teams. In hospitals with more than 200 beds, 71% of the dietitians indicated that they participated in rounds and 60% participated in a nutrition support team.

Significant correlations were noted between the dietitians' opinion about the adequacy of communications between themselves and physicians and how well their nutrition expertise was utilized. Of the dietitians considering their communications with physicians to be adequate, 61% felt their nutrition expertise was utilized "very well" and 36% felt it was used "fairly well". Only 15% of the dietitians who considered their communications to be inadequate felt their expertise was used "very well" and 73% felt it was "fairly well" utilized and 12% felt it was used "not too well". The percentage of physicians on the medical staff with a positive attitude about nutrition was significantly correlated with the dietitians' opinions about the adequacy of communications. When the dietitians reported that

less than 50% of the physicians on the medical staff had a positive attitude about nutrition, communications were most often reported to be inadequate. The frequency of verbal communications between physicians and dietitians was significantly correlated with the dietitians' opinions about the adequacy of communications. Fifty percent of the dietitians stating that their communications were adequate had verbal contact with physicians from one to three times daily. Eighty-three percent of the dietitians indicating that their communications were inadequate had verbal contact with physicians less than every other day. The number of dietitians participating in interdisciplinary medical team efforts was also significantly correlated with the dietitians' opinions about the adequacy of communications with physicians. Seventy-four percent of the dietitians who participated in rounds and 63% of the dietitians who participated in discharge planning for patients stated that communications with physicians were adequate. Sixty-four percent of the dietitians who didn't participate in rounds and 66% of the dietitians not participating in discharge planning indicated that communications were inadequate.

The initiator of communications between physicians and dietitians was significantly correlated with the physicians' utilization of the dietitians' nutrition expertise. When the physician was the initiator, 100% of the dietitians indicated that their expertise was utilized "fairly well" or "not too well". When the dietitian was the initiator, 65% stated that her expertise was utilized "fairly well"

and 23% stated it was used "very well". The purpose of communications was also significantly correlated with the initiator of communications. When the physician was the initiator of communications, 100% of the dietitians revealed that less than 10% of these were in reference to general nutrition information, but when the dietitian was the initiator, up to 20% of them were in reference to general nutrition information.

The age of the dietitian was significantly correlated with the dietitians' opinion regarding the adequacy of communications. Up to 52% of the dietitians younger than the age of 48 years felt that their communications with physicians were inadequate, while most of the dietitians older than 48 years considered their communications to be adequate. The explanations of adequacy varied with age, but the most frequently given reason for inadequate communications was that the dietetic department was understaffed. The physicians' utilization of the dietitians' nutrition expertise was also significantly correlated with the age of the dietitian. Almost all of the dietitians over the age of 31 years felt that their nutrition expertise was used "fairly well" to "very well". A larger percentage of dietitians under the age of 31 years felt that their nutrition knowledge was used "fairly well" to "not too well".

The results of this study indicate that most dietitians feel that communications between physicians and themselves are inadequate (65%). Most often, the explanation of inadequate communications given by the dietitians was that the dietetic department was under-

staffed. Other reasons included the fact that dietitians need to be more assertive and that physicians fail to recognize the importance of nutrition and/or the role of dietitians in the treatment of their patients. Assertiveness training courses for dietitians and nutrition courses for physicians would appear to help improve communications between dietitians and physicians.

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APPENDICES

APPENDIX A
QUESTIONNAIRE

If your hospital has more than one dietitian and your responsibility is food service administration only, the questions below will not apply to your position. Please check here (✓) and return this questionnaire unanswered. Thank you.

The first section is regarding general information about the type of physician available in your hospital. Please be as accurate as possible in your estimations.

1. How many physicians are on the medical staff of your hospital:

_____ (NUMBER OF PHYSICIANS)

2. How many of these physicians, if any, consistently have made referrals to you for nutrition counseling in the last six months?

_____ (NUMBER OF PHYSICIANS)

3. How many physicians, if any, from each of the specialty groups have consistently referred patients for nutrition counseling? (Write the number of physicians next to the appropriate specialty)

(NUMBER)

_____ GENERAL/FAMILY PRACTICE

_____ INTERNAL MEDICINE

_____ PEDIATRICS

_____ OBSTETRICS

_____ SURGERY

_____ OTHER (PLEASE SPECIFY) _____

_____ NONE CONSISTENTLY REFER

(Please turn the page)

4. Generally, what is the age group of physicians consistently referring patients for nutrition counseling? (Circle one number)

- 1 MOST ARE YOUNGER THAN 40 YEARS
- 2 MOST ARE OLDER THAN 40 YEARS
- 3 OTHER (PLEASE SPECIFY) _____
- 4 NO GENERALIZATIONS CAN BE MADE

5. In your opinion, approximately what percentage of the total number of physicians in your hospital have a positive attitude about nutrition?

_____ (PERCENT)

The next section is concerned with your professional communications with physicians about nutrition.

6. How often do you communicate with physicians about nutrition? (Circle one number for each of the types of communication listed below)

	<u>FREQUENTLY</u>	<u>OCCASIONALLY</u>	<u>NEVER</u>
a. BY TELEPHONE	1	2	3
b. BY LETTER/MEMO.	1	2	3
c. IN PERSON	1	2	3
d. THROUGH PATIENT CHARTS	1	2	3
e. OTHER (PLEASE SPECIFY) _____	1	2	3

7. How often do you have verbal communications about nutrition with physicians? (Circle one number)

- 1 MORE THAN THREE TIMES DAILY
- 2 ONE TO THREE TIMES DAILY
- 3 AT LEAST EVERY OTHER DAY, BUT LESS THAN DAILY
- 4 LESS THAN EVERY OTHER DAY
- 5 NEVER (SKIP TO QUESTION 9)

(Please go to next page)

3

8. How long do most of the verbal communications you have with physicians about nutrition usually last? (Circle one number)

1 LESS THAN 5 MINUTES
2 5-15 MINUTES
3 MORE THAN 15 MINUTES

9. Considering all of your communications with physicians about nutrition, approximately what percentage are in reference to his/her dietary prescriptions for patients?

_____ (PERCENT)

10. Considering all of your communications with physicians about nutrition, approximately what percentage are regarding general nutrition information?

_____ (PERCENT)

10a. If possible, please describe some examples of these communications.

11. Considering all of your communications with physicians about nutrition, approximately what percentage are regarding the food service or food quality?

_____ (PERCENT)

12. How well do you feel that your nutrition expertise is used in communications with physicians? (Circle one number)

1 VERY WELL
2 FAIRLY WELL
3 NOT TOO WELL
4 NOT AT ALL

(Please turn the page)

13. Approximately how many new referrals or specific orders for dietary instruction do you get from physicians in 5 days of work?

_____ (NUMBER OF REFERRALS)

14. Who is usually the initiator of communications about nutrition between yourself and physicians? (Circle one number)

1 USUALLY THE PHYSICIAN
2 ABOUT EQUAL
3 USUALLY MYSELF

15. Do you record in the same patient chart that physicians record in? (Circle one number)

1 YES _____	→ 15a. Where on the chart do you record?
2 NO	1 PROGRESS NOTES
3 I DON'T RECORD IN PATIENT CHARTS	2 SEPARATE RD NOTES
	3 CONSULTATION NOTES
	4 NURSING NOTES
	5 OTHER (Please specify)

16. Does your hospital have one physician assigned to be the liaison with the dietary department? (Circle one number)

1 YES
2 NO
3 DON'T KNOW

17. Is there a nutrition support team in your hospital? (Circle one number)

1 YES _____	→ 17a. Does it include at least one dietitian?
2 NO	1 YES
3 DON'T KNOW	2 NO

(Please go to next page)

5

18. Please indicate whether or not you participate in any of the interdisciplinary medical team efforts listed below. (Circle yes or no for each choice)

	<u>YES</u>	<u>NO</u>
a. DISCHARGE PLANNING COMMITTEE	1	2
b. TPN	1	2
c. INSERVICE FOR PHYSICIANS BY DIETITIANS	1	2
d. CASE STUDIES	1	2
e. ROUNDS	1	2
f. OTHER (PLEASE SPECIFY) _____	1	2

19. In your opinion, is the amount of communication about nutrition between yourself and physicians adequate or inadequate? (Circle one number)

- 1 ADEQUATE
2 INADEQUATE

- 19a. Briefly explain either answer, please.

The last section is concerned with your membership status in the American Dietetic Association (ADA) and your place of employment.

20. What is your division of practice in the ADA?
(Circle one number)

- 1 MANAGEMENT PRACTICE
2 CONSULTANT/PRIVATE PRACTICE
3 EDUCATOR
4 COMMUNITY DIETETICS
5 CLINICAL/RESEARCH

(Please turn the page)

6

21. What is your current membership status in the ADA?
(Circle one number)
- 1 ACTIVE
 - 2 INACTIVE
 - 3 ASSOCIATE
 - 4 RETIRED
 - 5 TECHNICIAN
22. What is your age?
_____ (AGE)
23. How many hours per week do you work at the hospital?
_____ (HOURS PER WEEK)
24. How many beds are there in your hospital?
_____ (NUMBER OF BEDS)
25. Is there anything else you'd like to add to this survey about your communications with physicians?

THANK YOU FOR YOUR ASSISTANCE WITH THIS SURVEY! PLEASE
RETURN IN ENCLOSED STAMPED ENVELOPE.

APPENDIX B

FIRST LETTER

School of
Home Economics



Corvallis, Oregon 97331 (503) 754-3551

March 8, 1983

Dear Dietitian:

Dietitians are beginning to expand their horizons and pursue practices involved in health promotion and preventive nutrition as well as continued efforts in acute care. Physicians, as well, are recognizing preventive medicine as important. We, as dietitians, have very little information regarding the communication between ourselves and physicians as a group.

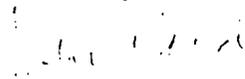
As a member of the American Dietetic Association and the Oregon Dietetic Association, and an employee of a health care facility, you have been selected to help give information about your communications with physicians. In order that the results will truly represent all dietitians in health care facilities in Oregon, it is important that each questionnaire be completed and returned. It is extremely important that every question on the questionnaire be answered to the best of your ability, as well.

You may be assured of complete confidentiality. The questionnaire has an identification number printed on the first page for mailing purposes only. This is so that I may check the number off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire.

I would be most happy to answer any questions you might have. Please write or call collect. My telephone number in Bend is (503) 389-5322.

Your contribution to the success of this study is greatly appreciated!

Thank you,
Sincerely,


Julie Hood
Graduate Student, Foods and Nutrition

APPENDIX C

POST CARD

March 16, 1983

Dear Dietitian:

Last week a questionnaire seeking information regarding your communications with physicians was mailed to you. You were chosen because you are a member of the CDA and employed in a health care facility.

If you have already completed and returned it, please accept my sincere thanks. If not, please do so today. It is extremely important that every questionnaire be included in the results to ensure accurate representation of all dietitians in health care facilities in Oregon.

If by some chance you did not receive the questionnaire, or it got misplaced, please call me immediately, collect (503-389-5322) and I will get another one in the mail to you today.

Thank you

Julie Hood

APPENDIX D

SECOND LETTER



March, 1983

Dear Dietitian:

About three weeks ago I wrote to you seeking information regarding your professional communications with physicians. As of today, I have not yet received your completed questionnaire.

This study is important because dietitians are beginning to expand their horizons and pursue practices involved in health promotion and preventive nutrition, as are physicians. We as dietitians have very little information regarding communications between ourselves and physicians as a group.

I am writing to you again because of the significance each questionnaire has to the usefulness of this study. You were chosen because you are a member of the American Dietetic Association and the Oregon Dietetic Association and an employee of a health care facility. In order that the results will truly represent all dietitians in health care facilities in Oregon, it is extremely important that I get your input.

In the event that your questionnaire has been misplaced, a replacement is enclosed.

Your contribution to the success of this study is greatly appreciated!

Thank you,
Sincerely,

A handwritten signature in cursive script that reads "Julie Hood".

Julie Hood
Graduate Student
Department of Foods and Nutrition

APPENDIX E

LETTER FOR LOG BOOKLET

March 1983

Dear Dietitian:

Thank you very much for completing and returning the questionnaire you received regarding your professional communications with physicians. The valuable data you provided is currently being processed and will be an important part of the over-all study.

I have one final request to make regarding the study. It would help make the study more complete if you would keep a log of your communications with physicians for your next five working days. I have enclosed a log booklet which will make this easier. It includes specific instructions to help keep an accurate log.

Again, you may be assured of complete confidentiality. The number written on the front of the booklet corresponds with a number on the mailing list so that it may be checked off when your booklet is returned.

I really appreciate your continued help. Thank you so much for your assistance, both in the initial questionnaire and this final phase of the study. Please do not hesitate to write or call me collect. My telephone number in Bend is (503) 389-5322.

Your contribution to the success of this study is greatly appreciated!

Thank you,
Sincerely,

Julie Hood
Graduate Student
Department of Foods and Nutrition

APPENDIX F

LOG BOOKLET

INSTRUCTIONS FOR USE OF LOG

1. Keep this log for the next five days you work.
2. Document all communications you have with physicians, if any, within the next five days you work. Specifically:
 - A. Write down the initiator of the contact, such as the physician or yourself.
 - B. Indicate the type of contact made, such as by telephone, letter, memo, personal, through patient charts, and others.
 - C. Explain the purpose of the contact, such as clarifying a diet order, giving general nutrition information, etc.
 - D. Note the specialty of the physician, such as general practice, pediatrics, surgery, internal medicine, obstetrics, and others.
3. Return the completed log in the addressed, stamped envelope enclosed.

THANK YOU AGAIN FOR YOUR ASSISTANCE!

(Please turn the page)

DAY ONE

Circle day of the week: Mon Tue Wed Thu Fri Sat Sun

A. INITIATOR
OF
CONTACT

B. TYPE
OF
CONTACT

C. PURPOSE
OF
CONTACT

D. PHYSICIAN'S
SPECIALTY
GROUP

A. INITIATOR OF CONTACT	B. TYPE OF CONTACT	C. PURPOSE OF CONTACT	D. PHYSICIAN'S SPECIALTY GROUP

DAY TWO

Circle day of the week: Mon Tue Wed Thu Fri Sat Sun

A. INITIATOR
OF
CONTACT

B. TYPE
OF
CONTACT

C. PURPOSE
OF
CONTACT

D. PHYSICIAN'S
SPECIALTY
GROUP

A. INITIATOR OF CONTACT	B. TYPE OF CONTACT	C. PURPOSE OF CONTACT	D. PHYSICIAN'S SPECIALTY GROUP

DAY THREE

Circle day of the week: Mon Tue Wed Thu Fri Sat Sun

A. INITIATOR
OF
CONTACT

B. TYPE
OF
CONTACT

C. PURPOSE
OF
CONTACT

D. PHYSICIAN'S
SPECIALTY
GROUP

A. INITIATOR OF CONTACT	B. TYPE OF CONTACT	C. PURPOSE OF CONTACT	D. PHYSICIAN'S SPECIALTY GROUP

DAY FOUR

Circle day of the week: Mon Tue Wed Thu Fri Sat Sun

A. INITIATOR OF CONTACT	B. TYPE OF CONTACT	C. PURPOSE OF CONTACT	D. PHYSICIAN'S SPECIALTY GROUP

DAY FIVE

Circle day of the week: Mon Tue Wed Thu Fri Sat Sun

A. INITIATOR OF CONTACT	B. TYPE OF CONTACT	C. PURPOSE OF CONTACT	D. PHYSICIAN'S SPECIALTY GROUP