DOCUMENT RESUME

ED 146 989 JC 780 004

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TITLE Employer Survey in the Health Technologies.
INSTITUTION Thomas Nelson Community Coll., Hampton, Va.
PUB DATE 28 Nov 77
NOTE 37p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Community Colleges; Employer Attitudes; *Employment Projections; *Health Occupations; Institutional Research; Job Market; *Junior Colleges; Labor Supply; *Manpower Needs; *Medical Technologists; Occupational Surveys; Questionnaires; Salaries
IDENTIFIERS *Employer Surveys

ABSTRACT

In order to obtain information on the current and future job market for 12 health technology occupations, a random sample of area physicians and 100% of 9 distinct types of health occupations employers were surveyed. The major employers, hospitals and nursing homes, were interviewed by college nursing faculty; all other employers were surveyed by mail. The employers were asked to provide the following information: (1) the number of full-time and part-time employees in 1975, 1977, and the number projected for 1981, by occupation; (2) the number of current employees without minimum certification and the additional number needed to provide optimum care for the current service level, by occupation; (3) the average length of time a job is vacant and the starting salary for each occupation; (4) an assessment of the supply of trained manpower in each occupation; (5) previous experience with graduates of the college; and (6) new occupations emerging in the health field and the employer's community education needs. The data were aggregated for all employers and by employer type. Weighted means were calculated for each occupation on the ratings of available trained manpower. Study procedures, findings, and conclusions are presented in the report, and the survey instrument and job descriptions for the 12 occupations are appended. (RT)

Employer Survey in the Health Technologies

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EMPLOYER SURVEY

IN THE

HEALTH TECHNOLOGIES

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November 28, 1977

ACKNOWLEDGEMENT

The author would like to thank Dr. Eugene Wingo, Division Chairman of Natural Science and Mathematics, Dr. Howard Taylor, the Director of Career Planning and Placement, and the nursing faculty for the time and effort they devoted to this project. Dr. Taylor developed the list of job titles and descriptions. Dr. Wingo, together with the author, planned and programmed the project, and the nursing faculty conducted the employer interviews. In addition, the support and cooperation of the staff of the Eastern Virginia Health System Agency, the members of the Tidewater Area Health Education Committee, and of course, the participating employers on the Peninsual were crucial to the success of this project.

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I. INTRODUCTION

The college has recently begun a series of employer surveys to facilitate long range curriculum planning. The objective of the surveys is to gather information on current and future employment in those occupations for which a postsecondary education of two years or less is appropriate. A secondary objective of the surveys is to provide a direct personal link between employers on the Peninsula and the personnel at the college so that information about the community needs and the technical capabilities of the college can be exchanged.

The initial survey reported here was of employers in the health technologies within the service area of the college. This survey was a pilot test of a procedure and an instrument which could then be used for employer surveys in the other four program areas of the college: Art and Design Technologies, Business Technologies, Engineering and Industrial Technologies, and the Public Service Technologies. The need for new occupational technical programs in the community could be assessed from the data developed in the surveys. They would also provide information on the job market in programs currently being offered by the college.

The importance of survey data to program planning has been further underscored by the Virginia Community College System Office and the State Council of Higher Education who now require manpower data

in support of new program proposals. Generally, very little data are available from secondary sources on the current and future job market in the service area for specific occupational-technical occupations.

Among the various program areas at the college, the health technologies were selected for the pilot study because program development in this area lagged far behind the others. Moreover, only a limited number of occupations would be involved in such a survey and the survey universe would be a good deal smaller than in any of the other program areas.

Unlike many other areas of employment, a good deal of data on current employment in the health field were available from secondary sources. However, the data were available for only a small proportion of the health technology occupations and no data were available on projected employment in three to five years. Hence, an employer survey was necessary to provide the kind of manpower data appropriate for long range program planning.

There was a good deal of interest in the employer survey among the staff of the Health Systems Agency for Eastern Virginia and the members of the Tidewater Area Health Education Committee since the data developed in the survey could be used in area-wide manpower planning in the health field. In fact, the Tidewater Area Health Education Committee endorsed the survey. Since the committee coordinates health program planning for Eastern Virginia, their support and cooperation was important to the success of the survey and to long range program planning in this area at the college.

II. PROCEDURES

In assessing the need for health manpower in the service area (the cities of Hampton, Newport News, Poquoson, and Williamsburg, and the counties of James City and York), the college relied on an economic demand approach. From this perspective, projections of manpower are based on the financial resources available to pay for the services of health personnel. Information is gathered by occupation from those best informed -- the employers -- on the current employment and budgeted vacancies and on the projected employment or anticipated additional personnel to be employed in some target year. The assumption of this approach is that budgeted vacancies represent real job openings for which funds are available and for which qualified applicants would be hired. Estimates of the need for additional personnel are made in terms of realistic plans for expansion.

Twelve occupations were selected for the survey: emergency medical technician, dental assistant, dental hygienist, dental lab technician, dietetic technician, inhalation therapist, medical lab technician, medical records technician, mental health technician, physical therapist assistant, radiation therapy technician, and registered nurse. These occupations are those for which an associate degree, diploma, or certificate program would be appropriate -- programs which Thomas Nelson Community College could offer should a need be

identified in the service area. The college currently provides training for only one of these occupations -- the registered nurse.

Nine distinct types of employers in the health technologies were identified: hospitals, nursing homes and homes for the aged, clinics, physicians, dentists, dental labs, health departments, public school systems, and emergency medical services. Emergency medical services consisted of fire departments, rescue squads, private ambulance services, and the health staff at Newport News Shipbuilding and Dry Dock Company and the National Aeronautics and Space Administration. The survey sample consisted of 100% of the employers in each type except for physicians. Since physicians were a minor employer of health technology occupations, a random sample of that group was selected.

The major employers of the health technology occupations -- the hospitals and nursing homes -- were interviewed by nursing faculty from the college who had undergone a short training program in interviewing techniques. The remaining employers were surveyed through the mail. The directors of the hospitals and nursing homes were contacted by the President of the college by mail and asked to participate in the survey. A copy of the interview schedule was enclosed and they were asked to designate someone on their staff for the interview. The interviews were typically completed in one session of approximately 30 minutes although on a number of occasions the employer followed up the interview with additional correspondence to clarify some of the information.

All other employers were mailed a survey instrument that closely resembled the interview schedule. After a two-week period, those employers who had not responded to the survey received a second request

together with another survey instrument. No systematic attempt was made to contact those employers who did not respond after the second mailing.

The interview schedule and the mail questionnaire asked employers to provide the following information:

1. The number of full-time and part-time employees in 1975, 1977, and the number of projected employees in 1981, by occupation.
2. The number of individuals currently employed without minimum certification and the number of additional employees needed to provide optimum care for the current service level, by occupation.
3. The average length of time a job is vacant and the starting salary for each occupation.
4. The employer's assessment of the supply of trained manpower in each occupation.
5. The employer's experience with TNCC graduates.
6. New occupations emerging in the health field and the community education needs of the employers.

Importantly, employers were told that the data they provided would be kept strictly confidential.

The data were aggregated for all employers, and by employer type. Weighted means were calculated for each occupation on the employer rating of the supply of trained manpower. Comments and suggestions of the employers were summarized. No data were reported for specific employers.

III. FINDINGS

Surveys were completed on 129 of the 216 employers in the sample. A break-out of respondents by employer type is provided in Table 1. Generally, interviews were completed on 22 of the 23 hospitals and nursing homes in the sample, and questionnaires were received from 55% of the remaining employers. Overall, 60% of the employers in the sample responded to the survey.

Occupational inventory and job market data are reported for all employers in Tables 2 and 3. As expected, registered nurses were the largest single occupation of the twelve health technology occupations in the survey. Employers in the sample reported 909 full-time and 238 part-time registered nurses currently employed.

Other leading occupations were dental assistant (128 full-time, 33 part-time), medical lab technician (89 full-time, 14 part-time), and medical records technician (71 full-time, and 3 part-time). Emergency medical technicians also appeared to be a major area of employment with 90 full-time and 40 part-time individuals. However, the full-time employees reported in the survey were, for the most part, fire fighters with emergency medical technician certification. Only 4 of the full-time individuals were employed as emergency medical technicians. All of the part-time individuals were volunteers in local rescue squads.

Current employment by type of employer is reported in Table 4.

TABLE 1
EMPLOYER SAMPLE*

EMPLOYER TYPE	SAMPLE	RESPONDENTS	% OF SAMPLE
Hospitals	12	12	100%
Nursing Homes/ Homes for Aged	11	10	91%
Clinics	33	13	39%
Physicians	13	8	62%
Dentists	119	63	53%
Dental Labs	10	7	70%
Health Departments	4	4	100%
Public Schools	5	5	100%
Emergency Medical Services	9	7	78%
TOTAL	216	129	60%

*The sample represented 100% of all employer types with the exception of the physicians. A random sample was drawn of physicians on the Peninsula.

TABLE 2

OCCUPATIONAL INVENTORY

Occupational Categories (Those for which a postsecondary program of two years or less is appropriate. These include degree, diploma, and certificate programs. See attached descriptions.)	Number of employees on payroll as of July 1, 1975			Number of employees on payroll as of July 1, 1977			Number of individuals currently in occupation without minimum certification	Additional full-time personnel needed to provide optimum care for present service level	Number of personnel needed July, 1981 for anticipated service level
	Full-time (35 hours or more)	Part-time		Full-time (35 hours or more)	Part-time				
		No. of employees	Total No. of hours worked*		No. of employees	Total No. of hours worked*			
EMERGENCY MEDICAL TECH.	81	40*	100*	90	40*	150*	11	6	126
DENTAL ASSISTANT	98	24	529	128	33	701	87	14	183
DENTAL HYGIENIST	9	10	172	12	13	198	0	2	30
DENTAL LAB TECHNICIAN	45	3	60	46	4	74	25	8	64
DIETETIC TECHNICIAN	11	0	0	10	0	0	1	0	21
INHALATION THERAPIST	20	5	92	29	4	70	10	7	45
MED. LAB TECHNICIAN	56	16	267	89	14	269	9	4	120
MED. RECORDS TECHNICIAN	49	2	40	71	3	60	3	2	89
MENTAL HEALTH TECHNICIAN	4	0	0	22	0	0	0	3	44
PHYSICAL THERAPIST ASST.	8	0	0	13	1	25	0	1	27
RADIATION THERAPY TECH.	25	1	20	39	5	150	2	2	49
REGISTERED NURSE	834	142	2966	909	238	4957	0	48	1303

*Volunteers

TABLE 3

JOB MARKET

Occupations	Average length of time job is vacant (days)	Annual Starting Salary	Local supply of trained manpower (please check the appropriate category)		
			Surplus	Sufficient	Shortage
EMERGENCY MED. TECHNICIAN	25	9,407		2	2
DENTAL ASSISTANT	17	5,260	4	33	15
DENTAL HYGIENIST	40	13,350		13	5
DENTAL LAB TECHNICIAN	71	7,247		2	6
DIETETIC TECHNICIAN	0	7,892			2
INHALATION THERAPIST	73	8,387		3	3
MEDICAL LAB TECHNICIAN	44	8,305		8	4
MEDICAL RECORDS TECH.	60	6,825	1	7	6
MENTAL HEALTH TECHNICIAN	196	7,020		1	1
PHYSICAL THERAPIST ASST.	53	7,409	1	4	2
RADIATION THERAPY TECH.	41	8,706		7	2
REGISTERED NURSE	49	8,623	5	15	9

TABLE 4
CURRENT EMPLOYMENT BY TYPE OF EMPLOYER*

	EMT	D.ASST.	D. HYG.	DLT	DIT	IT	MLT	MRT	MHT	PTA	RTT	RN
Hospitals	4 (4%)	24 (19%)	2 (17%)		9 (90%)	29 (100%)	72 (81%)	61 (86%)	22 (100%)	7 (54%)	34 (87%)	708 (78%)
Nursing Homes/ Homes for Aged					1 (10%)			1 (1%)		3 (23%)		46 (5%)
Clinics							1 (1%)					8 (2%)
Physicians							3 (3%)	2 (3%)			1 (3%)	2 (0%)
Dentists		103 (81%)	10 (83%)	3 (7%)				2 (3%)				1 (0%)
Dental Labs				43 (93%)								
Health Departments		1 (0%)					8 (9%)				2 (5%)	58 (6%)
Public Schools										2 (15%)		66 (7%)
Emergency Med. Services	86 (96%)						5 (6%)	5 (7%)		1 (8%)	2 (5%)	20 (2%)
TOTAL	90 (100%)	128 (100%)	12 (100%)	46 (100%)	10 (100%)	29 (100%)	89 (100%)	71 (100%)	22 (100%)	13 (100%)	39 (100%)	909 (100%)

*Full-Time Employment

Hospitals and Nursing Homes accounted for approximately 70 percent of all full-time employment in the twelve occupations. Hospitals were the major employer for all occupations except the emergency medical technician, the dental assistant, the dental hygienist, and the dental lab technician. As previously noted, the emergency medical technicians were primarily fire fighters with emergency medical technician certification. The dental assistants and dental hygienists were employed primarily by dentists, although a significant number were employed by the military hospitals in the service area. The dental lab technicians, not surprisingly, were employed chiefly in the dental labs. Of some interest was the fact that a few doctors reported medical lab technicians, medical records technicians, and radiation therapy technicians among their employees.

An occupational profile for 1977 through 1981 is presented in Table 5. Of the twelve occupations in the survey, a large proportion of dental assistants, dental lab technicians, and inhalation therapists were currently employed without minimum certification. The data suggest there is a need for programs in these areas to train employees for certification. However, in some occupations, this may not be a real need. For instance, there was very little interest among employers for a dental assistant program. Generally, the pay is quite low in comparison to the other health occupations, and dentists seemed to prefer to train these individuals themselves.

With respect to the projection of employment in 1981, four occupations were expected to increase by 100% or more: dental hygienist, dietetic technician, mental health technician, and the physical therapist assistant. Major increases were also expected in inhalation therapists,

TABLE 5
OCCUPATIONAL PROFILE
1977-1981

OCCUPATION	No. without Certification	Net increase 77-81	% increase 77-81
Emergency Medical Technician	11	36	40%
Dental Assistant	87	55	43%
Dental Hygienist	0	18	150%
Dental Lab Technician	25	18	39%
Dietetic Technician	1	11	110%
Inhalation Therapist	10	16	55%
Medical Lab Technician	9	31	35%
Medical Records Technician	3	18	25%
Mental Health Technician	0	22	100%
Physical Therapist Assistant	0	14	108%
Radiation Therapy Technician	2	10	26%
Registered Nurse	0	394	43%

dental assistants, and registered nurses. The situation with emergency medical technicians would seem to be somewhat special. The need here was not so much for a large number of technicians as it was for certification of existing employees in emergency medical technology. Although a few hospitals and nursing homes anticipated the need to hire additional emergency medical technicians in the future, most of the demand came from fire fighters and volunteer rescue squads for certification.

The average length of time a job is vacant ranged from 196 days for the mental health technician to 17 days for the dental assistant. No job vacancy data were reported for dietetic technician. To some extent, these data are a reflection of the need for trained manpower in these occupations in that the supply of trained individuals is not sufficient to fill vacancies as they become available. From this perspective the mental health technician, the inhalation therapist, the dental lab technician, the medical records technician, and the physical therapist assistant were areas of high demand and short supply. With respect to the mental health technician, two employers of this occupation had quite different experiences. One employer reported an average vacancy of seven days while the other an average vacancy of one year.

Annual starting salaries ranged from a high of $13,350 for the dental hygienist to a low of $5,260 for the dental assistant. Generally, salaries for civil service workers in government installations in the service area were a good deal higher than those in the private or state sector. In many cases, the data do not reflect the substantial fringe benefits that many employers in the health field provided for their

workers. For example, some hospitals provided free meals for some of their employees.

Figure 1 depicts the supply of trained manpower as perceived by employers. Each employer was asked to rate the supply on a three-point scale: 1, surplus; 2, sufficient; 3, shortage. A weighted mean was then computed for each occupation for all employers. The data reveal that the greatest shortage is in dietetic technicians followed by dental lab technicians, emergency medical technicians, inhalation therapists, and mental health technicians. Three of these occupations were also high demand areas based on job vacancy data. Importantly, employers rated the supply of trained manpower between sufficient and shortage in all occupations.

Employers were asked to indicate the total number of TNCC nursing graduates employed and to rate their qualifications and performance on the job. The employers reported that they employed a total of 26 TNCC nursing graduates (the number was undoubtedly greater since a number of employers simply did not know how many of their employees had graduated from TNCC). Ten employers rated their qualifications as follows: Excellent, 6; Good, 3; Fair, 1. Eight employers rated their performance on the job as follows: Excellent, 4; Good, 3; Fair 1.

Table 6 lists the health technology occupations employers felt would be in increasing demand in the near future and Table 7 details the areas of continuing education and training employers had requested. There was substantial interest among dentists for continuing education programs for dental assistants and dental hygienists. Other continuing

FIGURE 1
SUPPLY OF TRAINED MANPOWER

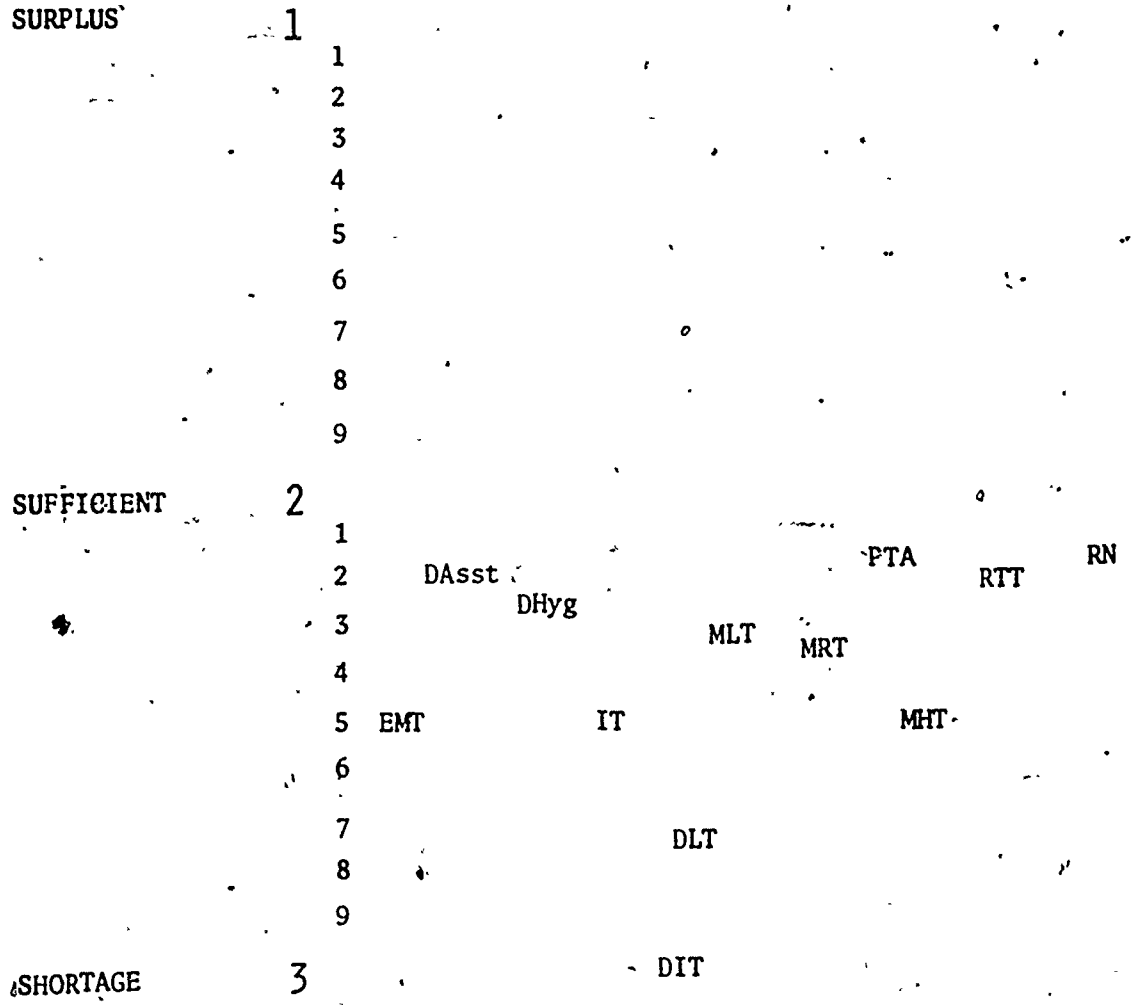

TABLE 6
EMERGING OCCUPATIONS

Alcoholic Counseling Aide

Assistant Health Educator

CAT Scanning Technician

Certified Occupational Therapy Aide

Certified Oral Surgery Assistant

Dental Therapy Technician

Food Service Management

Gerontology Specialist

Medical Secretary

Medical Transcriptionist

Nurse Practitioner

Occupational Therapist Assistant

Outreach Worker

Recreation Technician

Social Worker Aide

Specialized Research Technician

TABLE 7
AREAS OF EDUCATION AND TRAINING
REQUIRED BY EMPLOYERS

Dental Assistant	19	Physical Therapy Assistant	2
Dental X-Ray Technician	1		
Dental Hygienist	4	IV Therapy	1
Bacteriology for Dental Assistants	1		
Dental Lab Technicians	3	Geriatrics	1
		Examination Technician	1
Respiratory Therapist	1		
Emergency Medical Technologist	2	X-Ray Technician	1
Inhalation Therapy	2	Radiology	1
Cardiac Pulmonary Resuscitation	4		
Paramedic Program	1	Medical Records Technician	1
Practical Nurses	2		
Nursing Aides	3	Medical Lab Technician	1
Nursing	3		
Nursing Service	1	Health Care Management	1
Refresher courses in:			
Psychiatric Nursing	1	Food Service Management	4
OB/GYN	1	Nutrition	1
Seminars in Mental Health	1	Counseling	1
Mental Health Technician	1		
		Insurance Forms	1
Industrial Hygiene	1		

Note: The number refers to the frequency of the request.

Finally, there were quite a few comments concerning the shortage of licensed practical nurses and the need for programs in this area. This particular occupation was not included in the survey since the college did not anticipate the need to offer an LPN program in view of the availability of existing programs in the service area.

IV. CONCLUSIONS.

Prior to drawing some conclusion concerning the need for additional health technology programs in the service area, it is important to evaluate the survey procedure and the instrument since this project was designed as a pilot study. Unquestionably, the survey generated a good deal of manpower data for the health technologies which was heretofore unavailable. Moreover, because of the excellent cooperation of employers, the data are of high quality and will be extremely valuable in long range program planning. In addition, the survey procedure established valuable contacts between the staff of the college and employers in the community which have enhanced mutual understanding and cooperation.

The interviews were critical to the success of the survey. They not only greatly improved the response rate of employers, but they were largely responsible for the high quality of the data. The interview provided an opportunity to clear up any misunderstanding concerning the items in the survey. Also, the use of teaching faculty in an area related to the employers' activities seemed to improve the quality of the interview. It was important for faculty to be somewhat knowledgeable about the occupations involved in the survey.

The detailed job descriptions were important to employers in completing the survey since job titles were not always consistent

across employer types. This was particularly important in the health technologies since there is a high degree of specialization in the field.

Employers did have some difficulty in responding to the follow-up question on TNCC graduates since they were frequently unable to identify TNCC graduates specifically. Another problem was that employers were reluctant to project their manpower needs and to provide information on job vacancies and starting salaries in some cases. These issues were particularly sensitive among health employers. Therefore, the pledge of confidentiality for employer data was very important.

It was also very difficult to get sufficient information on the community education needs of employers with this instrument. Some useful information was provided but the staff at the college will need to continue talking with many employers in order to plan programs in this area.

With respect to the needs of health technology employers in the service area, there continues to be a shortage of qualified health technicians. Moreover, employer projections demonstrate an expanding need for trained manpower in the next four to five years.

Four occupations seemed to be in high demand and short supply now and in the future: dietetic technician, dental-lab technician, mental health technician, and inhalation therapist. There was also a good deal of interest in medical lab technician and medical records technician. The need for trained emergency medical technicians was

also apparent although the need in this instance was for certification of existing employees or volunteers rather than for substantial numbers of new technicians.

Some of the needs expressed in the survey can be met through programs in continuing education. This is true for emergency medical technician certification and related cardiac pulmonary resuscitation training. It was also true for dental assistants, dental hygienists, and nursing.

Finally, there was substantial interest in food service management among health employers. While occupations in food service management were not included in the survey, there nevertheless appears to be a need for trained manpower in this field among health employers.

APPENDIX A

Thomas Nelson Community College
P. O. Box 9407 Hampton, Virginia 23670
Phone (804) 826-4800

Thomas Nelson Community College is conducting a survey of employers on the Peninsula in order to gather information on current and future employment in selected health services occupations. The occupations in the survey are those for which a postsecondary education of two years or less is appropriate. The survey will also provide a direct personal link between employers on the Peninsula and the personnel at the college so that information about the community needs and the technical capabilities of the college can be exchanged.

This manpower survey in the health technologies has been endorsed by the Tidewater Area Health Education Committee (TAHEC), which has the general responsibility for coordinating health education in Eastern Virginia. The survey will provide manpower data useful to the committee in assessing the overall manpower needs of the health services area.

The college has reviewed existing secondary sources for health manpower data, such as the State Department of Health Application for License Renewal, and found the data to be insufficient for long range planning in the health technologies. Hence, it was deemed necessary to conduct a survey of Peninsula employers. We are asking for your assistance and support in the project.

Within the next few days, we will contact your office to set up an interview with you or your designee. A copy of the interview schedule is attached, together with occupational descriptions, so that you might have sufficient time to gather data. All twelve occupations may not be applicable to your situation, but we anticipate that you will have employees in at least one of the occupations.

Please know that the employment data you submit will be kept strictly confidential. Should you have any questions, please contact Dr. Stuart M. Bounds, the Director of Institutional Research at the college.

Cordially,

G. O. Cannon
President

Encls

APPENDIX B

Thomas Nelson Community College
P. O. Box 9407 Hampton, Virginia 23670
Phone (804) 826-4800

Dear

Recently we sent you a short questionnaire requesting information on current and future employment in selected health services occupations. Since this information is crucial to us in planning for our health technologies programs at the college, your response is vital if our data is to be complete.

It will take only a few minutes to fill out and return the form in the stamped envelope enclosed. If you have already done so, many thanks. If you have not yet had a chance to answer, we would be most grateful if you would do so now. Your answers will be held in strict confidence, of course.

Cordially,

G. O. Cannon
President

P.S. Possibly our original request went astray in the mails. Therefore we enclose another form.

EMPLOYER: _____ [1] [2] [3]

NOTE: EMPLOYER DATA WILL BE KEPT STRICTLY CONFIDENTIAL.

TYPE: _____ [4]

I. OCCUPATIONAL INVENTORY

For each of the occupations below, please indicate the number of employees and anticipated employees as requested:

Occupational Categories (Those for which a postsecondary program of two years or less is appropriate. These include degree, diploma, and certificate programs. See attached descriptions.) [5-6]	Number of employees on payroll as of July 1, 1975			Number of employees on payroll as of July 1, 1977			Number of individuals currently in occupation without minimum certification [27-28]	Additional full-time personnel needed to provide optimum care for present service level [29-30]	Number of personnel needed July, 1981 for anticipated service level [31-33]
	Full-time (35 hours or more) [7-9]	Part-time		Full-time (35 hours or more) [17-19]	Part-time				
		No. of employees [10-12]	Total No. of hours worked* [13-16]		No. of employees [20-22]	Total No. of hours worked* [23-26]			
01 EMERGENCY MEDICAL TECH.									
02 DENTAL ASSISTANT									
03 DENTAL HYGIENIST									
04 DENTAL LAB TECHNICIAN									
05 DIETETIC TECHNICIAN									
06 INHALATION THERAPIST									
07 MED. LAB TECHNICIAN									
08 MED. RECORDS TECHNICIAN									
09 MENTAL HEALTH TECHNICIAN									
10 PHYSICAL THERAPIST ASST.									
11 RADIATION THERAPY TECH.									
12 REGISTERED NURSE									

*Report the TOTAL part-time hours worked during an AVERAGE WEEK by all part-time employees in each occupation, e. g., 10 part time RN's, each working 20 hours per week, worked a total of 200 hours.

APPENDIX C

II. JOB MARKET

Please indicate the average length of time a position remains vacant, the starting salary, and the local supply of trained manpower for the following occupations, where those positions exist in your organization.

Occupations	Average length of time job is vacant (days) [34-36]	Annual Starting Salary [37-41]	Local supply of trained manpower (please check the appropriate category) [42]		
			Surplus	Sufficient	Shortage
			1	2	3
EMERGENCY MED. TECHNICIAN					
DENTAL ASSISTANT					
DENTAL HYGIENIST					
DENTAL LAB TECHNICIAN					
DIETETIC TECHNICIAN					
INHALATION THERAPIST					
MEDICAL LAB TECHNICIAN					
MEDICAL RECORDS TECH.					
MENTAL HEALTH TECHNICIAN					
PHYSICAL THERAPIST ASST.					
RADIATION THERAPY TECH.					
REGISTERED NURSE					

COMMENTS: _____

III. TNCC FOLLOW-UP

1. How many of your health services employees have received a diploma or degree from Thomas Nelson Community College?
   _____

2. How would you rate the qualifications and performance of TNCC graduates? (Please check)

   Qualifications: _____ excellent _____ good _____ fair _____ poor

   Performance: _____ excellent _____ good _____ fair _____ poor

   COMMENTS: _____

IV. FUTURE PROSPECTS

1. What new occupations (besides those listed in Part I) do you see emerging in the health technologies for which training at the certificate or associate degree level would be required? _____

2. What occupations listed in Part I do you think might be phased out or substantially curtailed in the next five years?

3. In what areas do you see the need for additional community college support to assist in the educational/training needs of personnel working in the health fields?

Area	Program

(Indicate by number the type of program you would recommend for each area of need)

1 In-service up-grading
2 Specialized courses
3 Certificate program
4 Workshops
5 Institutes
6 Other

APPENDIX D

OCCUPATION DESCRIPTIONS

THE OCCUPATIONS INCLUDED IN THIS SURVEY ARE THOSE FOR WHICH A POSTSECONDARY PROGRAM OF TWO YEARS OR LESS WOULD BE APPROPRIATE. THESE INCLUDE DEGREE, DIPLOMA, AND CERTIFICATE PROGRAMS.

EMERGENCY MEDICAL TECHNICIAN

Performs duties in three levels dependent upon training: Ambulance (A) 81 hr Dept. of Transp. approved course, Cardiac (C) 81 hr DOT course plus specific cardiac training and Paramdedic, 500 hour training program. All respond to emergency calls to provide efficient and immediate care to the critically ill and injured, and transports the patient to a medical facility. Determines the nature and extent of illness or injury and establishes priority for required emergency care. Renders emergency care, such as opening and maintaining an airway, giving positive pressure ventilation, cardiac resuscitation, controlling of hemorrhage, treatment of shock, immobilization of fractures, bandaging, assisting in childbirth, management of mentally disturbed patients, and initial care of poison and burn patients. Administers drugs, including intravenous fluids, as directed by a physician. Provides light rescue service if the ambulance has not been accompanied by a specialized unit. Reports verbally and in writing his observation and care of patient at the emergency scene and, in transit, to the emergency department staff for record and diagnostic purposes. Upon request, provides assistance to the emergency department staff.

DENTAL ASSISTANT

Performs following duties in office of Dentist. Obtains and records patient's personal information and medical history and records dental treatment rendered. Seats patient and prepares him for treatment. Arranges dental instruments, materials, and medication and hands them to Dentist as required. Keeps oral operating area clear during dental procedures by use of suction devices, water sprays, cotton rolls and holders, and by retraction of cheek and tongue. Measures silver alloy powder and mercury, and operates mechanical amalgamator to prepare dental amalgam. Mixes cements, using spatulas, glass, slabs, and paper pads. Supplies portions of filling materials to Dentist as required during placement of restorations. Aids Dentist in patient management by contributing to patient's comfort and placing patient at ease through reassuring conversation and actions. Gives emergency treatment for local and systematic distress under Dentist's direction. Sterilizes instruments in autoclaves, dry ovens, or with chemical disinfections. Stores sterilized instruments and maintains asepsis during storage. Prevents cross-contamination of instruments during use by practice of sterile techniques. Pours, trims, and mounts plaster models from impressions taken by Dentist. Explains to patients postoperative care, oral hygiene, and importance of preventive dentistry. Receives patients, schedules appointments, collects fees for services, answers telephone, orders supplies, and pays bills. Performs routine maintenance, such as lubricating equipment, sharpening dental hand instruments, replacing expendable parts, and cleaning equipment and treatment area. May expose and process dental X-ray films as directed by Dentist. May process gold restorations and dentures, using dental investments, electric furnaces, casting machines, curing tanks, and dental lathes.

DENTAL HYGIENIST

Performs dental prophylactic treatments and instructs groups and individuals in care of teeth and mouth: Removes calcareous deposits, accretions, and stains from teeth by scraping accumulation of tartar from teeth and beneath margins of gums, by using rotating brush, rubber cap and cleaning compound, and by other methods. Works finishing strip around and between teeth to remove stains inaccessible by other methods. Swabs gums with medication after cleaning teeth. Charts conditions of decay and disease by diagnosis and treatment by Dentist. Lectures community organizations and other interested groups regarding oral hygiene, using motion pictures, charts, and other visual aids. May expose and develop X-ray film, supply medicaments to aid in arresting dental decay, prepare filling material, and sterilize instruments.

DENTAL LABORATORY TECHNICIAN

Constructs and repairs dental appliances, according to Dentist's prescription: Fabricates full and partial dentures, using wax and plaster models, surveyors, tooth-color scales, articulators, and electric grinders and polishers. Constructs crowns, inlays, and wire frames by forming (bending and soldering) gold and platinum wire, or by casting in mold in centrifugal casting furnace. Constructs porcelain teeth from impression, using powdered procelain and water, electric furnaces, grinding wheels, and tooth-color scales. Polishes metal and plastic portions of completed appliance with electric grinders and polishers and tests it for occlusal harmony, using articulator.

DIETETIC TECHNICIAN

Performs duties in food administration including quality food production, developing standard recipes, managing a cafeteria, and training of personnel. Performs duties in nutrition care including taking diet histories of patients, calculating modified diets, teaching patients normal nutrition, and visiting patients to evaluate food.

INHALATION THERAPIST

Sets up and operates various types of oxygen equipment, such as iron lungs, oxygen tents, resuscitators, and incubators to administer oxygen and other gases to patients. Observes gauges and turns valves to regulate temperature and flow of gases. Examines patients' charts and identification bands, and consults with attending nurse to verify patients' identities. Relays to attending nurse Physician's prognosis and instructions for procedure in event of adverse symptoms. Makes out charge slips for inhalants, equipment used, and special services rendered, using rate list. Visits inhalant patients daily. Records cost of materials and equipment used and charges made to patients, and instructs trainees and Interns in operation of equipment.

MEDICAL LABORATORY TECHNICIAN

Performs routine tests in medical laboratory for use in treatment and diagnosis of disease: Prepares tissue samples for Pathologist, takes blood samples, and prepares vaccines. Executes such laboratory tests as urinalyses and blood counts, using microscopes, micrometers, and similar instruments. Makes quantitative and qualitative chemical and biological analyses of body specimens, under supervision of Medical Technologist or Pathologist. May be designated according to field of specialization as Blood-Bank Technician; Cytotechnician; Hematology Technician; Serology Technician; Tissue Technician.

MEDICAL RECORD TECHNICIAN

Assists the medical record librarian in the technical work of maintaining medical records, reports, disease indexes, and statistics required in hospitals and clinics. Classifies medical records of hospital patients and compiles statistics for use in discharges, deaths, births, and types of treatment rendered, using records, such as admission and discharge slips and medical charts.

MENTAL HEALTH TECHNICIAN

Under the supervision of the Physician-in-charge, works directly in a therapeutic manner with the mentally ill patients, individually or in groups. Observes patients through structured interview and casual conversation to determine their needs and supplies those needs, or reports them to a higher supervisor. Renders simple first aid or medications to patients as indicated. Counsels with patients about their individual concerns such as social needs, spiritual interest, and other specific needs. Confers with other staff personnel such as psychologists, social workers, physicians, etc. concerning the treatment and progress of the patient.

PHYSICAL THERAPIST ASSISTANT

A skilled technical health worker who assists the physical therapist in patient treatment programs and in other activities necessary to the operation of a physical therapy service.

RADIATION THERAPY TECHNOLOGIST (X-RAY TECHNICIAN)

Applies roentgen rays and radioactive substances to patients for diagnostic and therapeutic purposes. Positions patient under X-ray machine, adjusts immobilization devices, and affixes lead plates to protect unaffected areas. Administers drugs or chemical mixture orally or as enemas to render organs opaque. Adjusts switches regulating length and intensity of exposure. Develops film in accordance with photographic techniques. Assists in treating diseased or affected areas of body, under supervision of Physician, by exposing area to specified concentration of X-rays for prescribed periods of time. Prepares reports and maintains records of services rendered. Makes minor adjustments to equipment. May assist in therapy requiring application of radium or radioactive isotopes. May specialize in taking X-rays of specific areas of body.

REGISTERED NURSE

Renders general nursing care to patients in hospital, infirmary, sanitarium, or similar institution: Administers prescribed medications and treatments in accordance with approved nursing techniques. Prepares equipment and aids Physician during treatments and examinations of patients. Observes, records, and reports to supervisor or Physician patient's condition and reaction to drugs, treatments, and significant incidents. Rotates among various clinical services of institution, such as obstetrics, surgery, orthopedics, outpatient and admitting, pediatrics, psychiatry, and tuberculosis. May assist with operations and deliveries by preparing rooms, sterile instruments, equipment, and supplies, and handing, in order of use, to Surgeon or Obstetrician. May make beds, bathe and feed patients, and assist in their rehabilitation. May serve as leader for group of personnel rendering nursing care to of patients.