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Competency Needs...

of Sanitarian Aides

CONDUCTED BY



Phase I

June 1974

JOB COMPETENCY NEEDS OF SANITARIAN AIDES



Sponsored By

STATE DEPARTMENT OF PUBLIC INSTRUCTION
Career Education Division
Grimes State Office Building
Des Moines, Iowa

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H. C. Pengra

CHAPTER I

PRESENTATION OF THE PROBLEM

Introduction

A study of the history of public health and environmental work in the United States reveals the fact that a position entitled Sanitarian Aide has emerged primarily within the past decade. Prior to the 1960's almost no reference is made in the technical journals relative to this position. In the professional writings of the latter 1960's, however, frequent reference is made to a position variously entitled as Sanitary Assistant, Environmental-ist I, Deputy Inspector, and Sanitary Officer to name a few.

Since the position, Sanitarian Aide, is relatively new in this country it is not surprising that the job descriptions and duties vary widely among employers and supervisors. Because of the wide diversity of the descriptions of this position, the comprehensive job description found in the Dictionary of Occupational Titles was used to form the basis for this study.

The job description found in the Dictionary of Occupational Titles is as follows:

SANITARY INSPECTOR (gov. ser.) 168.287
sanitarian aid. Investigates public and private establishments, such as restaurants, hotels, homes, cafeterias and places of public gatherings, to determine compliance with or violation of public sanitation laws and regulations; makes unannounced visits to various institutions to insure regulations are being followed. Inspects eating and drinking establishments for cleanliness, and determines if vermine or other pests, such as rats or mice, are present. Takes samples of such materials as water, food, and air and preforms or orders chemical, physical or biological tests to determine contamination.

Issues violation notices and corrective orders when violations are found. Assists SANITARIAN (profession and kin) in conducting phases of environmental health programs.¹

This, then, is the job description of the sanitarian aide used in this study. While many other titles could have been used, the writer felt these other titles usually indicated a too narrow degree of specialization. The title, Sanitarian Aide, utilized in this paper indicates a position which requires the aide to have some knowledge and ability in those areas of environmental and public health work in which a professional sanitarian is required to have expertise. While the professional sanitarian invests at least four years in formal educational preparation, the aide or para-professional, with less than a baccalaureate degree, is usually employed at an entry level position.

Statement of the Study

At the present time there appears to be widespread diversity concerning the duties and responsibilities for the position of sanitarian aide. Since there apparently exists almost no research relative to the duties and responsibilities of the sanitarian aide, curriculum writers have little evidence other than their own experience upon which to base their curriculum decisions. With a base of research data, more effective learning experiences can be developed for the training of sanitarian aides by curriculum designers. The lack of research has also created difficulty for both employers and sanitarian aides relative to the responsibilities and duties of this position. The lack of precision in the job description and duties of the sanitarian aide has contributed to either the under or over-utilization of the worker employed in this position.

¹U.S., Department of Labor, Dictionary of Occupational Titles, Third Edition (Washington: Government Printing Office, 1965), I, p. 626.

The purpose of the study is to identify job competency needs of Sanitarian Aides in the field of environmental sanitation and to assemble the data acquired in matrix form that educators may use for curriculum development.

This study provides curriculum writers with additional criteria upon which to base effective education and training programs for sanitarian aides. Employers and sanitarian aides will also be provided with basic data upon which to develop job responsibilities.

Definition of Terms

Sanitarian Aide: A person with a high school or equivalent education trained in environmental control techniques to work as a para-professional under the supervision of a professional sanitarian.

Professional Sanitarian: A person with a minimum of a Bachelor's Degree in natural sciences and registered with the National Association of Environmental Sanitarians and/or another equal certifying agency in the field of environmental control.

Limitations of the Study

The survey population of this study is limited to those persons in supervisory control of the position, Sanitarian Aide, in the states of Iowa and Nebraska. The determination was made that the size of the population to be surveyed in these two states would be sufficient to give adequate data.

The survey is limited to local and county boards of health and their environmental sanitation supervisory personnel. The respondent for the local and county boards of health in each case was the chairman or vice-chairman. An inquiry of the Nebraska State Health Department indicated there was no counterpart of these boards in Nebraska. Therefore, the survey population was limited to only the environmental sanitation supervisory personnel in the State of Nebraska.

The method used to gather the necessary data presented another limitation. Because of the limits of time, financial resources, and physical endurance, the writer found it necessary to gather the required data through the use of a mailed questionnaire.

CHAPTER II
SURVEY OF LITERATURE

The survey of literature has covered the publications of the health and environment-oriented organizations of the United States of America. The technical journals and publications of the organizations referred to above were located in the public libraries of Council Bluffs, Iowa; Omaha, Nebraska; and the college libraries of Iowa Western Community College and the University of Nebraska at Omaha. No references were located which met the criteria set forth in the definition in Chapter I.

The American Journal of Public Health reports on the utilization of health aides.¹ The health aides referred to in this article are unemployed, untrained persons who could be utilized to some extent in official health agency settings. The article designs a "conceptual framework" in which the health aide might be effectively utilized. An earlier issue of the same publication refers to new health careers.² This article proposes to utilize otherwise unemployed and/or socially depressed people who need the social status of a career rather than an entry level job with no chance for personal satisfaction or improvement.

Several other articles were located which discussed similar concepts. However, nothing was located relevant to job competency needs of sanitarian aides.

¹Lawrence B. Callan, "A Conceptual Framework for Consideration in the Utilization of Health Aides", American Journal of Public Health, 61:5:979-987, 1971.

²Anthony Lenzer, "New Health Careers for the Poor", American Journal of Public Health, 60:1:45-50, 1970.

The National Association of Environmental Sanitarians furnished a proposed two-year preparatory curriculum.³ This curriculum has in it an introduction which states in part:

The conference was attended by twenty-one people from academic institutions with two-year or four-year programs in environmental health, from agencies that employ environmental health technicians and sanitarians, and by persons experienced or knowledgeable in training and curriculum development. This conference was held because of the manpower needs in the field of environmental health. There is an increasing utilization of and need for two-year trained environmental control, and by industry. The community colleges developing programs for training environmental technicians need curriculum guidelines. The prediction for future manpower needs, and programs to train people to meet these needs, make the development of curriculum guidelines even more critical. (See Appendix A).

Several branches of the Department of Health, Education, and Welfare were contacted and the writer has had extensive correspondence with several schools of public health (See Appendix B). While this phase of the study has been extremely time-consuming, the resultant correspondence is quoted since it sheds light as to the present data available related to the position of sanitarian aide.

Dr. C. H. Lawrence, Ph.D., Associate Professor of the Department of Environmental Health, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma informed us:

Your letter of January 15, to the Dean of the College of Health has been forwarded to the Department of Environmental Health for action. Unfortunately, we know of no literature review on the subject of "Competency Needs of Sanitarian Aides". We do, however, suggest that you contact Dr. Robert V. Garner, Oklahoma Environmental Information and Media Center, East Central State College, Ada, Oklahoma 74820.

As suggested, correspondence with Dr. Robert Garner was initiated, and he states:

³Two Year Curriculum Environmental Health Technician. A Conference Report, Atlanta, Georgia. National Environmental Health Association & U.S. Public Health Service, May 27, 1970.

Our personnel in the School of Environmental Science has been interested in the program you mentioned also. However, in their search for this same information very little has been found. In most of what has been uncovered has been just personal conversations with employed Sanitariums. From their interviews it appears that the working interest of being employed determines the competency of any Aides that he might employ.

Dr. J. W. Mason, Acting Chairman of the Department of Environmental Health Sciences of Tulane University, School of Public Health and Tropical Medicine at New Orleans, Louisiana states:

To my knowledge, the Florida System of community colleges offers a program in air and water pollution technology at the Brevard County Community College - which is (or was) operated with the help of the Department of Environmental Engineering at the University of Florida in Gainesville, Florida. Dr. Robert Sholtes was involved in the early phases and, I assume they considered "competency needs" in designing their curricula. Bob has since left the University, however, they should be able to provide you with a forwarding address.

Tulane has not been engaged in the area, thus we have no first hand information to offer.

A letter to Dr. Robert Sholtes was apparently not forwarded to his present address. Therefore, follow-up was incomplete on this suggestion.

In response to continued inquiry of the School of Public Health of the University of Texas at Houston, Dean Reuel Stallones responded:

In response to your request for literature on the competency needs of sanitarian aides, I am sorry but I do not know of anything. I am referring your letter to Dr. Hemphill on our staff for direct reply to you, and I also suggest that you ask the people at the University of California School of Public Health at Berkeley.

Dr. F. M. Hemphill, also of the University of Texas at Houston, emphasizes the lack of research on Sanitarian Aides in his letter, a part of which is quoted here.

Dr. Reuel A. Stallones has requested that I respond to your inquiry about the "competency needs" of sanitarian aides. I know of no literature which makes reference

to "sanitarian aides" per se. Enclosed is all the information I could find which is in some way associated with related occupations.

Professor Walter Jopke, Division of Environmental Health and Safety, University Health Service of the University of Minnesota, answered the writer's inquiry as follows:

Your letter regarding the competency needs of sanitarian aides has been forwarded to me for reply. Since we do not, at the University, offer any particular curriculum relating to sanitarian aides, it was necessary for me to do a little inquiring with other colleges in this area.

The first suggestion I would make is that you write to the National Environmental Health Association, 1600 Pennsylvania Street, Denver, Colorado 80203, and request a copy of their "Recommended Qualifications and Employment Standards for Environmental Health Personnel." This will give some background information and help you evaluate some of the environmental health needs for your study.

Last week the faculty of the local Anoka County College and Hennepin Junior College met with us and representatives from industry to determine the interest for sanitarian aides or trainees. It is our feeling that, unless it's a large health agency whereby these aides can be used for sampling, nuisances and so forth, there appears to be no need for them. However, it was interesting to note the interests of industry, (represented by Northern States Power Company, General Mills, Honeywell, Pollution Curbs and the State Pollution Control Agency) apparently are indifferent. Each industry had their own course requirements depending upon, for instance, a sampling program of air, water, waste, computer needs, etc., and it was difficult to put all of these courses into a two-year college level course. In any case, there is some interest from industry for this type of personnel.

Some of the faculty of the above-named colleges will be proceeding with this program and we should have further information from them.

Sorry that I do not have any more information. However, I hope that this information will be of some help.

Professor Cornelius W. Kruse of John Hopkins University, School of Hygiene and Public Health, states in part:

Unfortunately we do not have any literature on this subject but suggest you contact Dr. R. W. Jones, Chief, Foreign Students

Education Branch, Bureau of Health Profession Education and Manpower Training, 330 C Street, S.W., Washington D.C. 20201. He made an Environmental Health Manpower Study with special emphasis on "competency needs" of all kinds of personnel.

Dr. Jones was contacted by both correspondence and telephone.⁴ He was interested enough in this project to photocopy a large portion of his doctoral dissertation. This was thoroughly reviewed. This excellent work describes the educational background of the public health employees in the State of Maryland and it projects probable future needs in the same areas. Dr. Jones is one of the most noted authorities on public health training in this country and his work reveals the need for competency studies. He reports that in Maryland 20.6% of the sanitarians are without college degrees while 35.1% of the aides have completed one to four years of college work.

⁴Robert W. Jones III, "Maryland Environmental Health Manpower Projection 1980" (unpublished Doctoral dissertation, John Hopkins University, 1969), pp. 92-97.

CHAPTER III
METHODS AND PROCEDURES

The purpose of this chapter is to present the methods and procedures employed in this study to amass, order, and analyze the data of the respondents selected to participate in the study.

The Population of the Study

The total population selected to participate in this study numbered 245. The population was divided into five sub-groups consisting of: (1) 110 chairmen or vice-chairmen of local or county boards of health in Iowa, (2) 25 health department administrators in Iowa, (3) 19 health department administrators in Nebraska, (4) 48 practicing sanitarians in the State of Iowa, and (5) 43 sanitarians in the State of Nebraska.

All levels of government were represented in the survey population since the sanitarian aide would be an employee of a local, county, state, or Federal agency. The board of health chairmen were requested to complete the survey instrument to provide an opinion of major employers of what job competency needs are required.

The administrators and sanitarians within the survey population were requested to complete the questionnaire to provide their respective opinions relative to the job competency requirements of the sanitarian aide. This broad spectrum of opinions of supervisors, directors or administrators, and employers or board members provides a better foundation for the conclusions drawn in Chapter V than could be drawn from a narrow survey population.

The administrators and sanitarians of Nebraska and Iowa were surveyed to give a comparison of their opinions as to job requirements. Iowa does not have a professional sanitarian registration law. Nebraska has had such a law in effect for several years. Consequently all administrators and sanitarians surveyed in Nebraska are registered professional sanitarians while many in Iowa are not. It was deemed desirable to compare the competencies expected of the aides in Iowa and Nebraska since the potential supervisors in one state must meet registration standards which are not required in the other.

Development of the Survey Instrument

Early in the study it became evident that the potential knowledges and abilities of the Sanitarian Aide were numerous and varied. A questionnaire which would thoroughly survey all the potential skills required of the sanitarian aide would be so cumbersome and unwieldy that response from the population would be discouraged rather than enhanced. It was decided to divide the research into smaller modules to encourage the respondents to complete the survey instruments. The potential specialty work areas were grouped into five modules and this questionnaire was formulated based upon the specialty work area of the first module. Survey instruments will be constructed for each of the remaining modules as funds are made available for this work.

The survey instrument employed in this study was a questionnaire of 65 items. The questionnaire was constructed by the writer in consultation with the designated administrator of the project. Each item consisted of a question specifically designed to elicit a response which would describe, in part, a competency need of the sanitarian aide.

The respondent was provided three possible responses of varying degrees of importance to each question. These possible responses were: A, Very Necessary; B, Desirable; C, Not Applicable. It should be noted this survey instrument was not designed to gather data on the frequency of use of these competencies but upon the necessity of having them. Some of the competencies listed in the questionnaire are used seldomly. For example, only twice in 20 years has the writer had to do the epidemiology of a possible rabies outbreak in humans. Knowledge of how to handle these potentially critical situations was invaluable.

The first ten items of the questionnaire describe potentially desirable personal attributes of a sanitarian aide. All other questions were taken from ordinances, codes, and regulations under which the sanitarian aide might be expected to work in the areas of (1) private water supplies, (2) private sewage disposal, (3) general nuisance problems, and (4) food service inspection.

The survey instrument was field tested by the author. The field test was conducted by submitting the questionnaire to two board members, two administrators, and two sanitarians. Each item was checked for appropriateness of wording, clarity of item construction, and comprehensiveness of possible responses. Suggestions received from the field trial were incorporated into the final survey instrument. A copy of the final survey instrument appears in Appendix C.

Collection of the Data

The questionnaires were printed on the inside of a double sheet of paper with a cover letter printed on the front. The name and address of each member of the survey population was typed onto the cover letter. This provided a positive identification of each respondent. A self-addressed stamped envelope was included and the packet of materials was mailed.

The first mailing was made on January 10, 1974 to 183 individuals. The writer was delayed in obtaining the mailing addresses of the Nebraska Sanitariums Association members. The Nebraska group of 62 was added to the survey population on the 29th of January, 1974. The second mailing was made on January 30, 1974, and included the Nebraska population for the first time. The final mailing was completed on February 12, 1974. An extra cover letter was included in the second and third mailings.

The final date established for the return of the completed questionnaire was February 18, 1974. By the deadline date, a total of 163 completed questionnaires were received. Twenty-two additional questionnaires were returned as undeliverable, were completed by people who had retired from the profession, or were from respondents who felt unable to properly complete the survey instrument. These were not included in the survey results. The final tally of 163 usable questionnaires received represents a 66.53 percent return of the total population.

Treatment of the Data

Each questionnaire, as it was received by the investigator, was sorted and placed in the proper sub-group category. The responses contained in each questionnaire were recorded on specially-constructed worksheets.

Accumulated totals and percentages of the responses were computed for each item of the questionnaire.

To enable the investigator to analyze the data, a numerical value was assigned to each of the three possible responses. Response A, Very Necessary, was assigned the numerical value 3; response B, Desirable, was assigned 2; and response C, Not Applicable, was assigned the value of 1. The Competency Needs Factor (CNF) was computed for each item of the questionnaire for each sub-

group of the population surveyed. For example, on item #1, nine Iowa health department administrators indicated "A", two indicated "B", none indicated "C". This gave a weighted score of 31 from 11 respondents. The CNF for item #1 for this sub-group was computed at 2.82. The highest CNF possible in this study is 3.00 and the lowest CNF is 1.00. From the worksheets, the CNF was calculated for each of the 65 items for the five sub-populations of the survey.

CHAPTER IV
FINDINGS OF THE STUDY

This chapter will provide the reader with a display of the assembled data of the study. The assembled data is provided by total population, by the individual Iowa sub-groups, and by the individual Nebraska sub-groups. In addition, a table of comparison between the Iowa and Nebraska populations is provided for each item of the survey instrument.

The competency need factor of each item is listed in descending order in the left hand column in all but the final table. In these same tables the second and third columns provide the survey item number and item description respectively.

Table I displays the data amassed from the total respondent population of 163. The respondents indicated their opinions as to the necessity of a sanitarian aide to attain each listed competency. These CNF's are arranged in descending order of importance.

TABLE I
COMPETENCY NEED FACTORS IN DECENDING ORDER
OF IMPORTANCE BY THE TOTAL SURVEY POPULATION

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.87	43	Difference between sanitary & unsanitary conditions	2.78	27	Public health hazards of contaminated system
2.82	1	Knowledge of codes	2.77	14	Recognize need of disinfection
2.81	10	Cooperate with other depts.	2.76	65	Recognize good personal hygiene
2.80	2	Public relations			
	5	Dependable work habits			
	41	Recognize public health nuisance			

TABLE I - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.75	34	Recognize acceptable sewage installation	2.54	26	Procedure to seal an abandoned well
	64	Recognize safe and unsafe food handling procedures		28	Ability to apply standards to privies
				42	Fly, rodent, and odor control
2.74	33	Inspect existing sewage systems	2.52	22	Inspect well construction
2.73	60	Control pests in food service establishments	2.51	51	Understand the NSF standards
			2.50	29	Accomplish percolation tests
2.71	18	Sanitary precautions for each type of well	2.45	8	Enforcement procedures
	23	Routes of contamination in wells	2.42	25	Interpret water analysis reports
	53	Inspect eating and drinking establishments	2.40	6	Professional jargon
2.70	24	Sample water supplies	35	35	Know the basis of lagoon operation
	39	Recognize sewage system failure	2.39	49	Use of herbicides and pesticides in nuisance control
2.69	20	Disinfect a water system	2.38	30	Soil types and effluent absorption
	63	Recognize acceptable refrigeration facilities	2.36	38	Know lagoon maintenance requirements
2.68	3	Write meaningful reports	2.34	31	Sanitary plot maps and simple blueprints
	17	Recognize cross connections	2.31	9	Ability to be a court witness
2.66	4	Personal hygiene	2.26	37	Know lagoon safety requirements
	16	Recognize types of wells	44	44	Zoning
	56	Sanitation of multi-use utensils	2.21	32	Size sewage systems
	57	Recognize single service utensils	2.20	40	Hazards of waste disposal system failure
2.64	7	Methods of gathering & preserving evidence	2.18	21	Springs domestic water source
	54	Recognize cross connections in plumbing	2.15	50	Life cycles of disease vectors
	62	Control of pathogenic organisms in food	2.06	48	Recognize noxious weeds
2.61	61	Recognize hazardous chemicals			
2.59	15	Run field test for disinfectant residual			
2.57	52	Field tests on dishwashing machines			
	59	Evaluate cleanliness of vending machines			

TABLE I - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.02	47	Procedures in processing complaints	1.90	12	Calculate peak load of a water system
	58	Location of vending machines			
1.95	11	Calculate volumes of water	1.87	13	Size water systems to meet load requirements
1.94	19	How to run a "yield and draw-down" test	1.64	46	Estimate approximate age of fowl
	36	Size lagoons to a given system			
1.93	55	Size kitchen ventilation systems	1.51	45	Recognize sex of animals

Table I reveals six items with a CNF of 2.80 or above. The most needed skill as judged by the total population is the ability to differentiate between sanitary and unsanitary conditions by the sanitarian aide (#43). Closely following in descending order are knowledges of codes (#1), ability to cooperate with other departments or agencies (#10), public relations (#2), dependable work habits (#5) and the ability to recognize public health nuisances (#41). The least desirable competencies needed by the sanitarian aide in the opinions of the respondents are those with a CNF rating below 2.00. Table I shows eight items placed in this category: ability to calculate volume of water required by a facility (#11), the knowledge of how to run a "yield and drawdown" test on a well (#19), the ability to size a sewage lagoon for a facility (#36), and the ability to calculate the size of kitchen ventilation systems (#55). Also included in this group are: the ability to calculate the peak load on a water system (#12), the ability to size water systems to meet load requirements (#13), the ability to estimate approximate age of fowl (#46) and the knowledge to recognize the sex of animals (#45).

Table II provides the data gathered from the 52 Iowa board of health chairmen that responded to the questionnaire.

TABLE II
 COMPETENCY NEED FACTORS IN DESCENDING ORDER
 OF IMPORTANCE BY
 IOWA BOARD OF HEALTH CHAIRMEN

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.83	1	Knowledge of codes	2.57	3	Write meaningful reports
2.77	34	Recognize acceptable sewage installation		7	Methods of gathering & preserving evidence
				15	Run field test for disinfectant residual
2.75	2	Public relations		62	Control of pathogenic organisms in food
	43	Difference between sanitary & unsanitary conditions			
	4	Personal hygiene	2.56	63	Recognize acceptable refrigeration facilities
2.72	23	Routes of contamination in wells	2.54	17	Recognize cross connections
	24	Sample water supplies		53	Inspect eating and drinking establishments
	40	Hazards of waste disposal system failure		60	Control pests in food service establishments
2.71	5	Dependable work habits	2.52	26	Procedure to seal an abandoned well
2.70	18	Sanitary precautions for each type of well		47	Procedures in processing complaints
	39	Recognize sewage system failure		51	Understand the NSF standards
2.69	14	Recognize need of disinfection	2.51	25	Interpret water analysis reports
	16	Recognize types of wells			
	27	Public health hazards of contaminated system	2.50	52	Field tests on dishwashing machines
	33	Inspect existing sewage systems	2.49	28	Ability to apply standards to privies
	41	Recognize public health nuisance	2.48	6	Professional jargon
2.66	20	Disinfect a water system		29	Accomplish percolation tests
2.61	64	Recognize safe and unsafe food handling procedures		30	Soil types and effluent absorption
				59	Evaluate cleanliness of vending machines
2.59	10	Cooperate with other depts.	2.46	31	Sanitary plot maps and simple blueprints
	22	Inspect well construction		61	Recognize hazardous chemicals
	65	Recognize good personal hygiene			

TABLE II - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.45	35	Know the basis of lagoon operation	2.18	9	Ability to be a court witness
	57	Recognize single service utensils	2.17	55	Size kitchen ventilation systems
2.43	37	Know lagoon safety requirements	2.12	36	Size lagoons to a given system
	42	Fly, rodent, and odor control	2.08	11	Calculate volumes of water
				58	Location of vending machines
2.41	56	Sanitation of multi-use utensils	2.06	50	Life cycles of disease vectors
2.39	54	Recognize cross connections in plumbing	2.04	19	How to run a "yield and draw-down" test
				48	Recognize noxious weeds
2.38	38	Know lagoon maintenance requirements	1.19	12	Calculate peak load of a water system
2.35	49	Use of herbicides and pesticides in nuisance control		13	Size water systems to meet load requirements
2.34	8	Enforcement procedures	1.96	21	Springs domestic water source
2.21	44	Zoning	1.59	45	Recognize sex of animals
2.19	32	Size sewage systems	1.46	46	Estimate approximate age of fowl

A study of the responses from this population sub-group indicates that only one item in the survey scored a CNF above 2.79. This item is the sanitarian aide's competency in the codes and regulations pertaining to the work in which he is employed (#1). This sub-group lists five items below a CNF of 2.00. These are: ability to calculate the peak load of a water system (#12), ability to size a water system to meet the requirements of the facility it serves (#13), the knowledge of how to develop a spring for a domestic water supply (#21), the competency to recognize the sex of animals (#45), and the competency to the approximate age of fowl (#46).

Table III assembles the data from the 11 Iowa health department administrators included in the survey.

TABLE III

COMPETENCY NEED FACTORS IN DECENDING ORDER
OF IMPORTANCE BY IOWA BOARD OF HEALTH ADMINISTRATORS

CNF	Item No.	Item Description	CNF	Item No.	Item Description
3.00	2	Public relations	2.82	63	Recognize acceptable refrigeration facilities
	5	Dependable work habits		64	Recognize safe and unsafe food handling procedures
	24	Sample water supplies		65	Recognize good personal hygiene
	27	Public health hazards of contaminated system			
	40	Hazards of waste disposal system failure			
	43	Difference between sanitary & unsanitary conditions	2.73	10	Cooperate with other depts.
2.91	4	Personal hygiene		15	Run field test for disinfectant residual
	17	Recognize cross connections		16	Recognize types of wells
	29	Accomplish percolation tests		26	Procedure to seal an abandoned well
	33	Inspect existing sewage systems		28	Ability to apply standards to privies
	52	Field tests on dishwashing machines		42	Fly, rodent, and odor control
	53	Inspect eating and drinking establishments		61	Recognize hazardous chemicals
2.82	1	Knowledge of codes	2.64	62	Control of pathogenic organisms in food
	7	Methods of gathering & preserving evidence		3	Write meaningful reports
	14	Recognize need of disinfection		22	Inspect well construction
	18	Sanitary precautions for each type of well		23	Routes of contamination in wells
	20	Disinfect a water system		30	Soil types and effluent absorption
	34	Recognize acceptable sewage installation	51	Understand the NSF standards	
	39	Recognize sewage system failure	2.55	6	Professional jargon
	41	Recognize public health nuisance	8	Enforcement procedures	
	47	Procedures in processing complaints	37	Know lagoon safety requirements	
	54	Recognize cross connections in plumbing	38	Know lagoon maintenance requirements	
	56	Sanitation of multi-use utensils	2.46	49	Use of herbicides and pesticides in nuisance control
	57	Recognize single service utensils	2.35	9	Ability to be a court witness
	59	Evaluate cleanliness of vending machines		25	Interpret water analysis reports
60	Control pests in food service establishments	31		Sanitary plot maps and simple blueprints	
		32		Size sewage systems	
			35	Know the basis of lagoon operation	
			44	Zoning	

TABLE III - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.28	50	Life cycles of disease vectors	1.91	13	Size water systems to meet load requirements
2.25	48	Recognize noxious weeds		36	Size lagoons to a given system
2.09	58	Location of vending machines		55	Size kitchen ventilation systems
2.00	21	Springs domestic water source	1.83	19	How to run a "yield and draw-down" test
1.91	11	Calculate volumes of water	1.73	45	Recognize sex of animals
	12	Calculate peak load of a water system	1.64	46	Estimate approximate age of fowl

This population sub-group places 29 survey items in the CNF category of 2.80 or above. Of these 29 items, this sub-group was unanimous in its opinion (CNF's of 3.00) regarding the importance of six competency needs. The six items are: public relations (#2), dependable work habits (#5), the ability to sample water supplies (#24), knowledge of the public health hazards of contaminated water systems (#27), knowledge of the public health hazards of waste disposal system failure (#40), and the competency to differentiate between sanitary and unsanitary conditions (#43).

The Iowa boards of health administrators placed eight items in the CNF scale below 2.00. These are: the ability to calculate volumes of water required by a facility (#11), the ability to calculate a peak load of a water system (#12), the ability to size a water system with the requirements of a facility (#13), the ability to size lagoons to a given system (#36), the ability to size kitchen ventilation systems (#55), the necessity of how to run a "yield and drawdown test" on a water system (#19), the ability to recognize the sex of animals and fowl (#45), and the ability to estimate the approximate age of fowl (#46).

Table IV presents the figures accumulated from the 52 respondents in the Iowa sanitarians population sub-group.

TABLE IV
 COMPETENCY NEED FACTORS IN DESCENDING ORDER
 OF IMPORTANCE BY IOWA SANITARIANS

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.94	43	Difference between sanitary & unsanitary conditions	2.82	1	Knowledge of codes
			2.80	3	Write meaningful reports
2.92	41	Recognize public health nuisance	2.79	17	Recognize cross connections
2.90	4	Personal hygiene	2.78	20	Disinfect a water system
	27	Public health hazards of contaminated system	2.77	18	Sanitary precautions for each type of well
	40	Hazards of waste disposal system failure	2.76	61	Recognize hazardous chemicals
	53	Inspect eating and drinking establishments	2.75	10	Cooperate with other depts.
	64	Recognize safe and unsafe food handling procedures	23		Routes of contamination in wells
2.98	2	Public relations	2.73	22	Inspect well construction
	33	Inspect existing sewage systems	2.72	52	Field tests on dishwashing machines
	34	Recognize acceptable sewage installation	47		Procedures in processing complaints
2.88	24	Sample water supplies	2.71	29	Accomplish percolation tests
	60	Control pests in food service establishments	2.70	59	Evaluate cleanliness of vending machines
	62	Control of pathogenic organisms in food	2.69	15	Run field test for disinfectant residual
	63	Recognize acceptable refrigeration facilities	2.67	16	Recognize types of wells
	65	Recognize good personal hygiene	26		Procedure to seal an abandoned well
2.86	5	Dependable work habits	2.65	7	Methods of gathering & preserving evidence
	57	Recognize single service utensils	2.63	28	Ability to apply standards to privies
2.84	39	Recognize sewage system failure	2.61	6	Professional jargon
	54	Recognize cross connections in plumbing	2.60	8	Enforcement procedures
	56	Sanitation of multi-use utensils			
2.83	14	Recognize need of disinfection			

TABLE IV - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.58	42	Fly, rodent, and odor control	2.24	21	Springs domestic water source
2.57	25	Interpret water analysis reports		44	Zoning
	30	Soil types and effluent absorption	2.18	48	Recognize noxious weeds
2.53	51	Understand the NSF standards	2.06	11	Calculate volumes of water
2.52	34	Recognize acceptable sewage installation		12	Calculate peak load of a water system
	49	Use of herbicides and pesticides in nuisance control		36	Size lagoons to a given system
2.49	32	Size sewage systems	2.02	55	Size kitchen ventilation systems
	37	Know lagoon safety requirements	1.98	13	Size water systems to meet load requirements
2.44	9	Ability to be a court witness		58	Location of vending machines
	35	Know the basis of lagoon operation	1.92	19	How to run a "yield and draw-down" test
2.40	31	Sanitary plot maps and simple blueprints	1.46	45	Recognize sex of animals
2.32	50	Life cycles of disease vectors	1.34	46	Estimate approximate age of fowl

The professional sanitarians in Iowa scores 23 items in the survey in a category above a CNF of 2.79 in importance. They indicated that five items in the survey were of little importance. These five items rated a CNF of below 2.00. They are: the ability to size water systems to meet load requirements (#13), run a "yield and drawdown" test (#19), recognize sex in animals and fowl (#45), ability to estimate age of fowl (#46), and ability to evaluate the location of vending machines (#58).

The resultant data received from Nebraska health administrators is presented in Table V below. A total of 19 health administrators in Nebraska responded to the survey instruments.

TABLE V

COMPETENCY NEED FACTORS IN DESCENDING ORDER
OF IMPORTANCE BY NEBRASKA HEALTH ADMINISTRATORS

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.95	43	Difference between sanitary & unsanitary conditions	2.62	42	Fly, rodent, and odor control
2.90	4	Personal hygiene		54	Recognize cross connections in plumbing
2.81	65	Recognize good personal hygiene	2.57	18	Sanitary precautions for each type of well
2.80	1	Knowledge of codes		55	Size kitchen ventilation systems
	24	Sample water supplies		59	Evaluate cleanliness of vending machines
2.76	2	Public relations		62	Control of pathogenic organisms in food
	5	Dependable work habits		63	Recognize acceptable refrigeration facilities
	14	Recognize need of disinfection	2.52	15	Run field test for disinfectant residual
	23	Routes of contamination in wells		33	Inspect existing sewage systems
	40	Hazards of waste disposal system failure		39	Recognize sewage system failure
	41	Recognize public health nuisance		61	Recognize hazardous chemicals
	56	Sanitation of multi-use utensils	2.51	44	Zoning
	57	Recognize single service utensils	2.48	49	Use of herbicides and pesticides in nuisance control
	60	Control pests in food service establishments	2.43	8	Enforcement procedures
2.71	16	Recognize types of wells		9	Ability to be a court witness
	27	Public health hazards of contaminated system		20	Disinfect a water system
	64	Recognize safe and unsafe food handling procedures	2.36	51	Understand the NSF standards
2.66	3	Write meaningful reports	2.33	6	Professional jargon
	34	Recognize acceptable sewage installation		28	Ability to apply standards to privies
	47	Procedures in processing complaints		35	Know the basis of lagoon operation
	53	Inspect eating and drinking establishments		52	Field tests on dishwashing machines
2.65	10	Cooperate with other depts.	2.28	26	Procedure to seal an abandoned well
2.62	7	Methods of gathering & preserving evidence		37	Know lagoon safety requirements
	17	Recognize cross connections			
	22	Inspect well construction			

TABLE V - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.19	29	Accomplish percolation tests	1.90	21	Springs domestic water source
	50	Life cycles of disease vectors		32	Size sewage systems
2.14	31	Sanitary plot maps and simple blueprints	1.81	11	Calculate volumes of water
	38	Know lagoon maintenance requirements	1.80	19	How to run a "yield and draw-down" test
2.09	25	Interpret water analysis reports	1.71	12	Calculate peak load of a water system
2.05	48	Recognize noxious weeds	1.67	13	Size water systems to meet load requirements
	58	Location of vending machines			
2.00	36	Size lagoons to a given system	1.48	45	Recognize sex of animals
1.95	30	Soil types and effluent absorption	1.33	46	Estimate approximate age of fowl

This sub-group of administrators places five competency needs on the scale of 2.80 or above. They are: a knowledge of codes and regulations (#1), have good personal hygiene (#4), the ability to sample water supplies (#24), the ability to differentiate between sanitary and unsanitary conditions (#43), and the ability to recognize good personal hygiene within eating establishments (#65).

This same sub-group also indicated that nine survey items were, in its opinion, of least importance. The nine items are indicated with a CNF of less than 2.00.

The data from the final sub-group of the study, the professional sanitarians in the State of Nebraska, is provided in Table VI. This sub-population numbered 29 respondents.

TABLE VI

COMPETENCY NEED FACTORS IN DECENDING ORDER
OF IMPORTANCE BY NEBRASKA SANITARIANS

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.83	41	Recognize public health nuisance	2.64	18	Sanitary precautions for each type of well
	43	Difference between sanitary & unsanitary conditions		33	Inspect existing sewage systems
2.82	40	Hazards of waste disposal system failure	2.62	7	Methods of gathering & preserving evidence
				47	Procedures in processing complaints
2.79	4	Personal hygiene	2.58	59	Evaluate cleanliness of vending machines
	65	Recognize good personal hygiene			
2.78	1	Knowledge of codes	2.57	3	Write meaningful reports
2.76	64	Recognize safe and unsafe food handling procedures		23	Routes of contamination in wells
2.75	14	Recognize need of disinfection	2.55	57	Recognize single service utensils
	60	Control pests in food service establishments			
2.72	2	Public relations	2.53	16	Recognize types of wells
	5	Dependable work habits		39	Recognize sewage system failure
	62	Control of pathogenic organisms in food			
2.71	20	Disinfect a water system	2.52	10	Cooperate with other depts. Fly, rodent, and odor control
2.70	27	Public health hazards of contaminated system	2.50	34	Recognize acceptable sewage installation
2.68	24	Sample water supplies	2.48	51	Understand the NSF standards
	53	Inspect eating and drinking establishments		52	Field tests on dishwashing machines
	54	Recognize cross connections in plumbing	2.46	22	Inspect well construction
	56	Sanitation of multi-use utensils			
2.67	17	Recognize cross connections	2.44	26	Procedure to seal an abandoned well
2.65	61	Recognize hazardous chemicals	2.43	15	Run field test for disinfectant residual

TABLE VI - Continued

CNF	Item No.	Item Description	CNF	Item No.	Item Description
2.39	6	Professional jargon	2.03	58	Location of vending machines
2.38	8	Enforcement procedures	2.02	30	Soil types and effluent absorption
2.36	28	Ability to apply standards to privies	1.96	50	Life cycles of disease vectors
2.34	44	Zoning	1.93	19	How to run a "yield and draw-down" test
2.25	35	Know the basis of lagoon operation		32	Size sewage systems
2.24	9	Ability to be a court witness	1.83	48	Recognize noxious weeds
2.22	25	Interpret water analysis reports	1.64	11	Calculate volumes of water
2.21	29	Accomplish percolation tests	1.62	55	Size kitchen ventilation systems
	38	Know lagoon maintenance requirements	1.61	13	Size water systems to meet load requirements
2.18	37	Know lagoon safety requirements	1.60	36	Size lagoons to a given system
2.15	31	Sanitary plot maps and simple blueprints	1.57	12	Calculate peak load of a water system
2.14	49	Use of herbicides and pesticides in nuisance control		45	Recognize sex of animals
2.07	21	Springs domestic water source	1.32	46	Estimate approximate age of fowl

A study of the responses of Nebraska sanitarians reveals that three survey items scored above 2.80 in its CNF. The items are the ability to know the public health hazards of private waste disposal system failure (#40), the ability to recognize the public health aspects of a nuisance (#41), and the ability to differentiate between sanitary and unsanitary conditions (#43). This same subgroup gave a CNF of less than 2.00 to a total of 11 items included in the survey.

Table VII provides the reader with an item-by-item CNF comparison between the total Iowa and total Nebraska populations. The left column gives the item number. The second column gives the competency need factor of each item and the third column gives a brief description of the survey item.

TABLE VII

A SURVEY ITEM COMPARISON OF
 COMPETENCY NEED FACTORS BETWEEN
 THE IOWA AND NEBRASKA RESPONDENTS

IOWA			NEBRASKA		
Item No.	CNF	Item Description	Item No.	CNF	Item Description
1	2.82	Knowledge of codes	1	2.80	Knowledge of codes
2	2.83	Public relations	2	2.78	Public relations
3	2.68	Write meaningful reports	3	2.61	Write meaningful reports
4	2.83	Personal hygiene	4	2.84	Personal hygiene
5	2.81	Dependable work habits	5	2.74	Dependable work habits
6	2.55	Professional jargon	6	2.37	Professional jargon
7	2.63	Methods of gathering & preserving evidence	7	2.62	Methods of gathering & preserving evidence
8	2.48	Enforcement procedures	8	2.40	Enforcement procedures
9	2.42	Ability to be a court witness	9	2.32	Ability to be a court witness
10	2.68	Cooperate with other depts.	10	2.57	Cooperate with other depts.
11	2.05	Calculate volumes of water	11	1.71	Calculate volumes of water
12	2.02	Calculate peak load of a water system	12	1.65	Calculate peak load of a water system
13	1.97	Size water systems to meet load requirements	13	1.63	Size water systems to meet load requirements
14	2.77	Recognize need of disinfection	14	2.76	Recognize need of disinfection
15	2.64	Run field test for disinfectant residual	15	2.47	Run field test for disinfectant residual
16	2.68	Recognize types of wells	16	2.61	Recognize types of wells
17	2.69	Recognize cross connections	17	2.65	Recognize cross connections
18	2.75	Sanitary precautions for each type of well	18	2.65	Sanitary precautions for each type of well
19	1.96	How to run a "yield and draw-down" test	19	1.88	How to run a "yield and draw-down" test

TABLE VII - Continued

IOWA			NEBRASKA		
Item No.	CNF	Item Description	Item No.	CNF	Item Description
20	1.96	Disinfect a water system	20	2.59	Disinfect a water system
21	2.10	Springs domestic water source	21	2.00	Springs domestic water source
22	2.66	Inspect well construction	22	2.53	Inspect well construction
23	2.75	Routes of contamination in wells	23	2.65	Routes of contamination in wells
24	2.82	Sample water supplies	24	2.73	Sample water supplies
25	2.53	Interpret water analysis reports	25	2.16	Interpret water analysis reports
26	2.63	Procedure to seal an abandoned well	26	2.38	Procedure to seal an abandoned well
27	2.83	Public health hazards of contaminated system	27	2.71	Public health hazards of contaminated system
28	2.63	Ability to apply standards to privies	28	1.73	Ability to apply standards to privies
29	2.65	Accomplish percolation tests	29	2.20	Accomplish percolation tests
30	2.54	Soil types and effluent absorption	30	2.00	Soil types and effluent absorption
31	2.44	Sanitary plot maps and simple blueprints	31	2.15	Sanitary plot maps and simple blueprints
32	2.34	Size sewage systems	32	1.92	Size sewage systems
33	2.82	Inspect existing sewage systems	33	2.59	Inspect existing sewage systems
34	2.85	Recognize acceptable sewage installation	34	2.57	Recognize acceptable sewage installation
35	2.45	Know the basis of lagoon operation	35	2.29	Know the basis of lagoon operation
36	2.07	Size lagoons to a given system	36	1.03	Size lagoons to a given system
37	2.41	Know lagoon safety requirements	37	2.22	Know lagoon safety requirements
38	2.48	Know lagoon maintenance requirements	38	2.18	Know lagoon maintenance requirements

TABLE VII - Continued

IOWA			NEBRASKA		
Item No.	CNF	Item Description	Item No.	CNF	Item Description
39	2.79	Recognize sewage system failure	39	2.53	Recognize sewage system failure
40	2.85	Hazards of waste disposal system failure	40	2.84	Hazards of waste disposal system failure
41	2.81	Recognize public health nuisance	41	2.80	Recognize public health nuisance
42	2.54	Fly, rodent, and odor control	42	2.56	Fly, rodent, and odor control
43	2.88	Difference between sanitary & unsanitary conditions	43	2.88	Difference between sanitary & unsanitary conditions
44	2.24	Zoning	44	2.32	Zoning
45	1.57	Recognize sex of animals	45	1.50	Recognize sex of animals
46	1.42	Estimate approximate age of fowl	46	1.33	Estimate approximate age of fowl
47	2.64	Procedures in processing complaints	47	2.64	Procedures in processing complaints
48	2.12	Recognize noxious weeds	48	1.92	Recognize noxious weeds
49	2.44	Use of herbicides and pesticides in nuisance control	49	2.29	Use of herbicides and pesticides in nuisance control
50	2.19	Life cycles of disease vectors	50	2.10	Life cycles of disease vectors
51	2.54	Understand the NSF standards	51	2.44	Understand the NSF standards
52	1.80	Field tests on dishwashing machines	52	2.42	Field tests on dishwashing machines
53	2.73	Inspect eating and drinking establishments	53	2.68	Inspect eating and drinking establishments
54	2.63	Recognize cross connections in plumbing	54	2.66	Recognize cross connections in plumbing
55	1.99	Size kitchen ventilation systems	55	1.60	Size kitchen ventilation systems
56	2.64	Sanitation of multi-use utensils	56	2.72	Sanitation of multi-use utensils
57	2.67	Recognize single service utensils	57	2.64	Recognize single service utensils

TABLE VII - Continued

IOWA			NEBRASKA		
Item No.	CNF	Item Description	Item No.	CNF	Item Description
58	1.63	Location of vending machines	58	2.04	Location of vending machines
59	2.58	Evaluate cleanliness of vending machines	59	2.58	Evaluate cleanliness of vending machines
60	2.73	Control pests in food service establishments	60	2.76	Control pests in food service establishments
61	2.62	Recognize hazardous chemicals	61	2.60	Recognize hazardous chemicals
62	2.73	Control of pathogenic organisms in food	62	2.66	Control of pathogenic organisms in food
63	2.73	Recognize acceptable refrigeration facilities	63	2.60	Recognize acceptable refrigeration facilities
64	2.78	Recognize safe and unsafe food handling procedures	64	2.74	Recognize safe and unsafe food handling procedures
65	2.74	Recognize good personal hygiene	65	2.80	Recognize good personal hygiene

A study of Table VII with regard to the general attributes of a sanitarian aide (items 1-10) reveals that two items, knowledge of codes (#1) and personal hygiene (#4), attained a CNF of 2.80 or above by both Iowa and Nebraska respondents. No item in the general attribute group has a CNF below 2.00.

In the group of competencies pertaining to private water supplies (items 11-27), only the Iowa respondents gave any item a CNF above 2.80. These were the ability to sample private water supplies (#24) and the knowledge of public health hazards of a contaminated water system (#27). In this group of seventeen items, both the Iowa and Nebraska respondents indicated a CNF of less than 2.00 on two items--the ability to size water systems to meet load requirements (#13) and how to run a "yield and drawdown" test (#19).

In the third group of responsibilities, pertaining to private sewage disposal systems (items 28-40), the two state survey sub-populations gave a CNF

of above 2.80 to one item--knowing the public health hazards of waste disposal system failure (#40). In this same group of competencies, the Iowa respondents gave no CNF of below 2.00 but the Nebraska respondents gave three items less than 2.00. These three items were #28, #32, and #36.

In the group of responsibilities pertaining to nuisance complaints (items 41-50), both population sub-groups were in agreement on two items. Each gave a CNF of 2.80 or above to the ability to recognize public health aspects of a nuisance (#41), and the ability to differentiate between sanitary and unsanitary conditions (#43). Both population sub-groups indicated a CNF of less than 2.00 to the ability to recognize sex of animals and fowl (#45), and the ability to estimate the approximate age of fowl (#46).

In the fifth and last group of responsibilities on the subject of food services sanitation (item 51-65), Iowa respondents gave no items a CNF of 2.80 or above. Nebraska respondents ranked only one item above a CNF of 2.79--the ability to recognize good personal hygiene (#65). In the low CNF range, the Iowa respondents gave three items (#52, #55, #58) a CNF of less than 2.00 and the Nebraska respondents gave only one item (#55) a CNF of less than 2.00.

CHAPTER V
SUMMARY AND CONCLUSIONS

Summary

The principal objective of this study was to identify the competencies required of a sanitarian aide to work effectively in the field of environmental health. For purposes of this study, the job description for a sanitarian aide as stated in the Dictionary of Occupational Titles was used as a reference to the general duties established for the position.

In the survey of literature, the writer could find no studies which had been conducted relative to the competency needs of a sanitarian aide. The writer's search included both a study of the references in college libraries and extensive correspondence with Schools of Public Health and Environmental Science.

The survey population of the study was 245 professional environmental personnel of Iowa and Nebraska. This population was surveyed by means of a specially-constructed questionnaire which had been previously field tested. To analyze the data, the three possible survey item responses were assigned numerical values as follows: Very Necessary - 3; Desirable - 2; Not Applicable - 1. A mean was computed for each item which is designated in this study as the Competency Need Factor (CNF). Usable data was received from 163 of the survey population. This represented a return of 66.5 percent.

Conclusions

The writer has exercised the prerogative of designating each survey item with a CNF of 2.50 and above as a "very necessary" competency for a sanitarian aide. A survey item with a CNF of between 2.00 and 2.50 is designated as a

"desirable" competency. An item with a CNF of less than 2.00 has been given a "low priority" competency rating by the writer.

A study of the responses from a total population relative to the ten competency items of the "General Attributes" section of the questionnaire reveals seven items in the "very necessary" category and three items in the "desirable" category. The data indicate that all ten general attribute items should be seriously considered by the curriculum writer in designing a sanitarian aide training program.

The data from the total population with regard to the seventeen competency items of the "Private Water Supplies" section indicate eleven items in the "very necessary" category and one in the "desirable" category. Five items placed in the "low priority" rank. The writer concludes that twelve competencies related to a sanitarian aide's responsibility pertaining to private water supplies should be given due consideration for inclusion in a sanitarian aide program curriculum.

A perusal of the returns from the entire survey population on the thirteen items in the "Private Sewage System" section of the questionnaire reveals that five items placed in the "very necessary" category and one placed in the "desirable" category. One item received a "not applicable" rating with a CNF of less than 2.00. These data indicate to the writer that twelve items should be considered by curriculum writers for inclusion in a course of study designed to train sanitarian aides.

The amassed data from all respondents related to the responsibilities of the sanitarian aide in the area of public health nuisance complaints show three responsibilities recorded in the "very necessary" category, five responsibilities placed in the "desirable" category, and two received a "low priority" rating. Of the ten listed responsibilities of a sanitarian aide in the area of public health nuisance complaints, the writer concludes that only two competencies not

be included in the sanitarian aide program. These two competencies are the ability to recognize the approximate age of fowl and the ability to recognize the sex of animals.

The total population figures relating to the fifteen listed responsibilities in the area of eating and drinking establishment sanitation indicate that the respondents ranked thirteen competency items in the "very necessary" category and one item in the "desirable" area. One competency item ranked as a "low priority" item. The respondents to the survey have indicated that fourteen of the responsibilities in food service sanitation area should be strongly considered in a preparatory curriculum for sanitarian aides.

Recommendations

The research conducted and documented in this report constitutes but a small segment of this total research project. In order to complete this total research project, it is the recommendation of the writer that this work continue. This recommendation is supported by the response of the survey population by their requests for copies of the completed work.

CHAPTER V
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Summary

The principal objective of this study was to identify the competencies required of a sanitarian aide to work effectively in the field of environmental health. For purposes of this study, the job description for a sanitarian aide as stated in the Dictionary of Occupational Titles was used as a reference to the general duties established for the position.

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"desirable" competency. An item with a CNF of less than 2.00 has been given a "low priority" competency rating by the writer.

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The data from the total population with regard to the seventeen competency items of the "Private Water Supplies" section indicate eleven items in the "very necessary" category and one in the "desirable" category. Five items placed in the "low priority" rank. The writer concludes that twelve competencies related to a sanitarian aide's responsibility pertaining to private water supplies should be given due consideration for inclusion in a sanitarian aide program curriculum.

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be included in the sanitarian aide program. These two competencies are the ability to recognize the approximate age of fowl and the ability to recognize the sex of animals.

The total population figures relating to the fifteen listed responsibilities in the area of eating and drinking establishment sanitation indicate that the respondents ranked thirteen competency items in the "very necessary" category and one item in the "desirable" area. One competency item ranked as a "low priority" item. The respondents to the survey have indicated that fourteen of the responsibilities in food service sanitation area should be strongly considered in a preparatory curriculum for sanitarian aides.

Recommendations

The research conducted and documented in this report constitutes but a small segment of this total research project. In order to complete this total research project, it is the recommendation of the writer that this work continue. This recommendation is supported by the response of the survey population by their requests for copies of the completed work.

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APPENDIX A

TWO YEAR CURRICULUM
ENVIRONMENTAL HEALTH TECHNICIANS

TWO YEAR CURRICULUM
ENVIRONMENTAL HEALTH TECHNICIANS

A CONFERENCE REPORT

ATLANTA, GEORGIA

MAY 27 AND 28, 1970

Conducted by the National Environmental Health Association under
Contract No. PLC-70-5 from the Environmental Health Service,
Public Health Service, Department of Health, Education and Welfare

I N T R O D U C T I O N

A conference on the education and training of environmental health technicians was held by the National Environmental Health Association on May 27 and 28, 1970 in Atlanta, Georgia. The conference was attended by twenty-one people from academic institutions with two-year or four-year programs in environmental health, from agencies that employ environmental health technicians and sanitarians, and by persons experienced or knowledgeable in training and curriculum development. This conference was held because of the manpower needs in the field of environmental health. There is an increasing utilization of and need for two-year trained environmental health technicians by governmental agencies concerned with environmental control, and by industry. The community colleges developing programs for training environmental technicians need curriculum guidelines. The prediction for future manpower needs, and programs to train people to meet these needs, make the development of curriculum guidelines even more critical.

The changing nature and the increasing intensity of problems in environmental control have made it impractical and impossible for professionals to cope adequately with both technical and professional duties. For example: job analyses indicate that many activities currently performed by the professional sanitarian could be performed by a person with less than baccalaureate level education and training. Thus, a partial solution to the manpower shortage is to train technicians who can handle a significant part of the technical aspects of the work currently being performed by professionals. The technician can be trained in approximately one-half the time at less expense than is required to prepare the entry-level professional. The technician cannot replace the professional, but can be trained to carry on the technical aspects of an environmental health

control program under the supervision of a professional. This allows the professional environmentalist more time to function in areas of planning, developing, administering, evaluating and promoting environmental control programs. The salary range for the technician, when compared with that of the professional, is also appealing to an employer. The overall purpose of the environmental health technician training program is to upgrade the expertise and general technical competency of people available for employment in environmental control programs.

Environmental health technician training can most appropriately be offered by community colleges or junior colleges. Such institutions conduct training programs extending up to two years duration, which may lead to the Associate of Arts degree, or the Associate of Applied Science degree, or to similar Associate degrees. Many community colleges and junior colleges are committed to technical and vocational training and currently have many other types of technician training programs, including several in the health fields. They are geared to recruit people into two year training programs and have maximum contact with students desiring this type of training. The community colleges can utilize professionals employed in the surrounding regions to assist in the technical development and implementation of the technician training program and to supplement the faculty responsible for the training program.

The charge to the conference was:

1. Develop a definition for the environmental health technician.
2. Develop a guideline for a two year curriculum for environmental health technicians.
3. Develop a plan for dissemination of the curriculum guidelines.

At the onset of the conference, the participants agreed on three points and then devoted a major effort to the development of curriculum guidelines.

The three points agreed upon were:

1. The acceptance of the description of the environmental Health technician as it appears in the Position-Classification Standards, U. S. Civil Service Commission, Environmental Health Technician Series, GS 689, October, 1969.
2. The environmental health technician should be trained as a generalist so that he can either work across the board in a general environmental control program, or function in a number of specialized areas or activities.
3. The environmental Health technician should be "job ready" when he completes his two year program of study, but he should not be dead-ended. That is, he should be able to transfer into a four year environmental health curriculum with maximum transferability of credit.

The following curriculum guidelines were developed, recognizing that each institution has its own peculiar or unique requirements and goals and is limited by its resources, facilities and faculty. Contemplating such variations, the guidelines are designed to emphasize those topic areas found to be most commonly essential to the development of the "job ready" generalist in environmental health technology.

TWO YEAR ENVIRONMENTAL HEALTH TECHNICIAN PROGRAM

CURRICULUM GUIDELINES

LIBERAL ARTS AND SCIENCE CONTENT

	<u>Recommended Topics</u>	<u>Desirable Topics</u>
<u>COMMUNICATIONS:</u>	English Composition	Report Writing Speech
<u>SOCIAL SCIENCES:</u>	Sociology Political Science Local and State government. Psychology Interpersonal and group relationships.	Economics
<u>SCIENCES:</u>	Algebra Physical Science or Introduction to Physics General Chemistry General Biology General Microbiology with laboratory	Trigonometry and Geometry. Ecology

TWO YEAR ENVIRONMENTAL HEALTH TECHNICIAN PROGRAM

CURRICULUM GUIDELINES

TECHNICAL CONTENT

<u>Recommended Topics</u>	<u>Desirable Topics</u>
Water Quality	Industrial Hygiene
Air Quality	Noise Control
Food Protection	Radiological Health
Vector Control	Land Use
Solid Wastes	Accident Prevention
Shelter	Plan Review

SURVEY COURSE--ENVIRONMENTAL HEALTH

A curriculum preparing the environmental health technician should include a course designed to cover all the recommended and desirable topics listed above. This course should be offered early in the curriculum to acquaint the student with the broad scope of the field of environmental control and how these topics relate in a comprehensive environmental health program. The course should be valuable to other students in the school because of the general interest in this basic subject area.

SURVEY COURSE--PUBLIC HEALTH OR COMMUNITY HEALTH

The student should be introduced to the broad field of public health or community health, of which environmental health is a part. The course should give definition and application of health education methodology and principles, epidemiology, communicable disease control, public health law, and public health organization and administration.

FIELD TRAINING

Field Training is an essential part of the training of a technician. The field involvement should be comprehensive and of sufficient duration to permit

the student to actually practice the skills to which he has been introduced through lectures, laboratory sessions, problem solving sessions, and field observations. Much of the field involvement should consist of performing activities that will be of value to the training agency and to the community.

CURRICULUM CONTENT

The liberal arts and the sciences in the curriculum should total approximately 40 percent of the two year program. The technical content of the curriculum should total approximately 40 percent of the two year program. The remaining 20 percent of the program should consist of elective courses or special college requirements. The development of a curriculum should be preceded by an analysis or survey of the employment opportunities and skill requirements of the environmental health technician within the region normally served by the institution. Such a study will identify areas of vocational competence which should be emphasized in the technical areas of the curriculum.

VARIATIONS IN CURRICULUM CONTENT

It is recognized that curricula will vary on the basis of regional needs and the organizational pattern of any particular educational institution. Variations are expected between the colleges in the courses offered, in the course titles, and in the actual course content. Each college would be expected to offer a majority of the recommended topics in a comprehensive manner. The remainder of the recommended topics, and the desirable topics, would be incorporated into the survey course in environmental health. A program which does not offer a majority of the recommended topics in a comprehensive manner could not be considered a generalized program.

TRANSFERABILITY OF CREDITS

The courses required and recommended for the two year curriculum should be of such content and level that a majority of the hours taken in the two year

curriculum would be transferable to a four year curriculum in environmental health or related field.

FACULTY QUALIFICATIONS

The instructors of the technical content of the curriculum should have the following minimum qualifications:

- a. Three years experience within the general field of environmental health practice.
- b. Have recognized professional standing.
- c. Possess a B.S. in environmental health or related area of study.

The coordinator of the environmental health technician program should have the following qualifications:

- a. Five years experience within the general field of environmental health practice.
- b. Have recognized professional standing.
- c. Possess a Master's degree which will enhance his competencies in environmental health or in teaching.

CURRENT AND CONTINUING NEEDS

1. There is a need for task analyses of the jobs to be filled by the environmental health technician. This information will assist in the development of specific content needed in environmental health technician training programs. The environmental health technician training programs should be continually reviewed to be certain that there is not "over educating" at the community college level. Seeking to maximize the transferability of credits may endanger the primary goal of realistic preparation of the "job ready" technician.
2. There is a need for occasional review of the curriculum guidelines presented in this report to see that they are looking ahead and preparing the type

and quality of environmental health technicians that are needed in the coming years.

3. There is a need for an effort to coordinate the federal programs and funding for specialized environmental technician training programs so that the various programs complement one another and are not contradictory or damaging to other programs.
4. The environmental health technician will find an increasing demand for his service outside the conventional public health organizational structure. There is a need for a forum of the related professions and the representative employer groups to outline the common goals and objectives which should guide future curriculum development for technician training.

DISTRIBUTION OF CONFERENCE REPORT

The results of this conference will be largely wasted unless the curriculum guidelines that have been developed and the accompanying recommendations are distributed to those persons, agencies, organizations, and institutions which can utilize them and put them into effect. We recommend that this report be circulated to the following:

Federal Agencies

Bureau of Health Professions, Education and Manpower Training,
Division of Allied Health Manpower, N.I.H.

Federal Water Quality Administration*

Environmental Health Service*

Dept. of Health, Education and Welfare--Office of Personnel

Office of Education--Vocational Training

Department of Labor

State Agencies

Department of Education--All states

Department of Health#--All states

Office of Comprehensive Health Planning--All states

Professional Organizations

National Environmental Health Association, and each affiliate.

American Public Health Association

International Association of Milk, Food and Environmental Sanitarians--
each affiliate.

National Society of Professional Sanitarians--and each affiliate

Conference of Local Environmental Health Administrators

American Intersociety Academy for Certification of Sanitarians

American Society for Engineering Education

Other Organizations

American Association of Junior Colleges

Association of Schools of Allied Health Professions

National Sanitation Foundation--POTEET (Programs of Training and
Education in Environmental Technology)

*Succeeded by the Environmental Protection Agency

#Or newly established agencies for environmental control.

A P P E N D I X

TWO YEAR CURRICULUM FOR ENVIRONMENTAL HEALTH TECHNICIANS

PARTICIPANTS

Atlanta, Georgia
May 27-28, 1970

V. Harry Adrounie	Environmental Consultant Reed Road Downington, R.D. 2, Pa. 19335
Ned E. Baker	Environmental Health Consultant Health Planning Assn. of N.W. Ohio 2243 Ashland Avenue Toledo, Ohio 43620
William A. Broadway	Regional Sanitarian Western Regional Office North Carolina State Board of Health Room 13, Biltmore Plaza Bldg. Asheville, N.C. 28803
Richard Clapp	Chief, Sanitarian Development Activities Health Professions Branch Center for Disease Control Atlanta, Georgia 30333
Fred N. Cooper	University of California Office of the Chancellor Davis, California 95616
Kenneth L. Copes	Asst. Professor of Health Box 1055, Eastern Kentucky University Richmond, Kentucky 40475
John R. Fleming, Co-Chairman	Asst. Professor, Environmental Health School of Health Sciences and Art Ferris State College Big Rapids, Michigan 49307
Jack B. Hatlen	Asst. Professor, Dept. of Environ. Health Administrative Officer, School of Public Health and Community Medicine University of Washington Seattle, Washington 98105
Dr. Wilbur Hoff	Institute for Health Research 2728 Durant Avenue Berkeley, California 94704
Richard S. Holdstock	Environmental Health & Safety Officer University of California Davis, California 95616

Herman Koren	Asst. Professor, Health & Safety Indiana State University Terre Haute, Indiana 47803
John J. McHugh	Assistant Director Office of Professional Education New York City Health Department 125 Worth Street New York, N.Y. 10013
Dr. Joseph McIntosh	Administrator, Special Services Division of Public Health Room 1721, City-County Building Indianapolis, Indiana 46204
Dr. Monroe T. Morgan Chairman	Professor, Dept. of Environmental Health East Tennessee State University Johnson City, Tennessee 37601
Edison E. Newman	Chief, Allied Health Training Section DAHM/BEMT/NIH 9000 Rockville Pike Bethesda, Maryland 20014
David F. Newman	Asst. Professor, Environmental Health Technology Department Broome Technical Community College Binghamton, N.Y. 13902
William B. Parsons	Assistant Manpower Director Parklawn Building, Room 18-81 5600 Fishers Lane Rockville, Maryland 20852
Nicholas Pohlit, Project Director	Executive Director National Environmental Health Association 1600 Pennsylvania Street Denver, Colorado 80203
John Reddington	National Sanitation Foundation Box 1468 Ann Arbor, Michigan 48106
Edith Reinisch	Coordinator of Health Related Professions Holyoke Community College Holyoke, Massachusetts 01040
Harry Steigman	Director, Bureau of Housing and Environmental Control Pennsylvania Department of Health Harrisburgh, Pennsylvania

UNITED STATES CIVIL SERVICE COMMISSION

POSITION - CLASSIFICATION STANDARDS

GS-698

ENVIRONMENTAL HEALTH TECHNICIAN SERIES

GS-698

This series includes positions that involve investigating, evaluating, and providing information on sanitation practices, techniques, and methods for the purpose of identifying, preventing, and eliminating environmental health hazards. Positions in this occupation require a practical knowledge of basic environmental health concepts, principles, methods, and techniques, including survey and inspection techniques and control and eradication methods.

EXCLUSIONS

1. Positions that involve planning, developing, evaluating, and advising on programs concerned with the elimination and prevention of environmental health hazards. These positions are classified in the Sanitarian Series, GS-688.
2. Positions involving inspections or investigations for the primary purpose of enforcing compliance with public health laws and regulations pertaining to food, drug, cosmetics, or to the wholesomeness and purity of food and food products. Such positions are classified in the appropriate series of the Investigation Group, GS-1800.
3. Positions primarily involving grading foods or other commodities, or developing, installing, or administering quality control programs. Such positions are classified in the appropriate series of the Commodity Quality Control, Inspection and Grading Group, GS-1900.

EXPLANATORY STATEMENT

Environmental Health aids and technicians provide technical support and assistance to the sanitarian or other health specialists (e.g., sanitary engineer, health physicist, health officer). They conduct surveys and implement measures to control the spread of diseases and other health hazards or conditions (e.g., food contamination, air and water pollutants, insect and rodent harborages). They take samples of such materials as water, food, and air, and perform or assist sanitarians in performing tests to determine contamination. They explain how to repair, install, or construct sanitation facilities (e.g., water systems, sewage disposal systems, plumbing), as well as how to maintain and utilize individual facilities. They investigate public and private establishments (e.g., food markets, restaurants, dairy plants, water supplies, medical care facilities) to determine compliance with or violation of public sanitation laws and regulations. However, when the primary purpose of the position is to perform the latter duty, it should be allocated to the appropriate series in the investigation group (e.g., Public Health Inspection Series, GS-1860; Food Inspection Series, GS-1863).

At the higher levels, many of the assignments made to technicians require the same depth of analysis as sanitarian positions. They differ from sanitarian assignments in that the technician is not required to resolve problems that require the application of new methods and techniques or those that require action beyond the specific work assignment. On the

(TS 82)

UNITED STATES CIVIL SERVICE COMMISSION

GS-698

GS-698

other hand, the knowledges and abilities required for sanitarian work may be different in kind and breadth from those required for technician work, but not necessarily different in grade level. For example, technician work may require a high level of technical or administrative qualifications applicable to specific work assignments based on a comprehensive background of practical experience, training, and skill in applying knowledge of precedents, guides, and techniques.

While all positions require a practical knowledge of basic environmental health concepts, principles, methods, and techniques, the experienced technician must have a detailed knowledge of the laws and regulations governing environmental health practices as well as what constitutes a good environmental health program in one or more of the following, or other comparable environmental health areas:

- Milk and Food
- Water Supply
- Waste
- Insect and rodent
- Shellfish
- Recreation, housing, care facilities,
or other institutions.

TITLES

The title for trainee or developmental jobs (GS-1/3) is Environmental Health Aid. Environmental health aids collect and record adequate data on existing environmental sanitation conditions and initiate corrective action on the health hazards that are fully covered by written guidelines.

The title Environmental Health Technician is established for all non-supervisory positions in this series (GS-4 and above). Illustrative examples of tasks performed by environmental health technicians include the following:

- Conduct investigations to determine the source of outbreaks of diseases (e.g., water supplies, contaminated food, untreated waste);
- Determine sources of, and methods to eliminate or control, insect and rodent breeding and harborage;
- Inspect and evaluate sanitary aspects of rail, sea, and air conveyances;
- Perform water quality tests on individual water supplies and disinfect community water sources and systems; and
- Prepare reports of findings and discuss recommendations with owners or representatives of public and private establishments to secure cooperation in improving sanitation practices.

Those positions which include supervisory responsibilities of such significance as to require supervisory qualifications will be identified by the adding of the prefix, Supervisory, to the basic title.

EVALUATION NOTES

This material does not include grade-level criteria. The following standards and guide may be used to evaluate environmental health aid and technician positions.

(TS 82)

POSITION - CLASSIFICATION STANDARDS

GS-698

GS-698

Positions concerned with investigative, survey, or testing activities will be evaluated by comparison with the criteria for related occupations such as:

The Biological Technician Series, GS-404, Section II,

The Medical Technician Series, GS-645, and

The Physical Science Technician Series, GS-1311.

Supervisory positions should be evaluated by reference to the Supervisory Grade-Evaluation Guide, Part I.

(TS 82)
October 1969

APPENDIX B
SURVEY CORRESPONDENCE



THE UNIVERSITY OF TEXAS AT HOUSTON
SCHOOL OF PUBLIC HEALTH

P. O. Box 20186
(713) 741-0400

Astrodome Station

Houston, Texas 77025

OFFICE OF THE DEAN

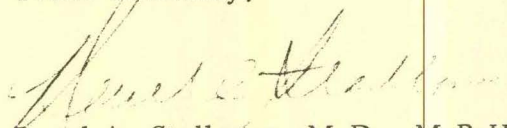
22 January 1973

Harold C. Pengra, R.S., Coordinator
Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

In response to your request for literature on the competency needs of sanitarian aides, I am sorry but I do not know of anything. I am referring your letter to Dr. Hemphill on our staff for direct reply to you, and I also suggest that you ask the people at the University of California School of Public Health at Berkeley.

Yours sincerely,


Reuel A. Stallones, M.D., M.P.H.
Dean

RAS/lm

cc: Dr. Hemphill



TEXAS PROJECT MEDIHC
THE UNIVERSITY OF TEXAS AT HOUSTON
SCHOOL OF PUBLIC HEALTH



P. O. Box 20186

Astrodome Station

Houston, Texas 77025

(713) 741-0400

February 16, 1973

Mr. Harold C. Pengra, R.S.
Coordinator, Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

Dr. Reuel A. Stallones has requested that I respond to your inquiry about the "competency needs" of sanitarian aides. I know of no literature which makes reference to "sanitarian aides" per se. Enclosed is all the information I could find which is in some way associated with related occupations.

Sincerely,

F. M. Hemphill
Project Director

FMH/dlr

Enclosures

THE JOHNS HOPKINS UNIVERSITY

DEPARTMENT OF ENVIRONMENTAL HEALTH

SCHOOL OF HYGIENE AND PUBLIC HEALTH

615 North Wolfe Street • Baltimore, Maryland 21205

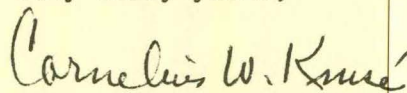
February 5, 1973

Mr. Harold C. Pengra, R.S., Coordinator
Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra,

We thank you for your letter of January 15, 1973. Unfortunately we do not have any literature on this subject but suggest you contact Dr. R.W. Jones, Chief, Foreign Students Education Branch, Bureau of Health Profession Education and Manpower Training, 330 C Street, S.W. Washington D.C. 20201. He made an Environmental Health Manpower Study with special emphasis on "competency needs" of all kinds of personnel.

Very truly yours,



Cornelius W. Krusé
Professor

CWK:as

ENVIRONMENTAL HEALTH
AROUND THE WORLD
1600 PENNSYLVANIA
DENVER, COLORADO 80203
PHONE (303) 222-4456 OR 222-5118

NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

October 12, 1972

NICHOLAS POHLIT, M.P.H., R.S.,
EXECUTIVE DIRECTOR

Harold C. Pengra, R.S., Coordinator
Environmental Sanitation
IOWA WESTERN COMMUNITY COLLEGE
321 Sixteenth Avenue
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

In answer to your letter of September 12 we are enclosing some materials which we hope may be useful to you in dealing with the question of qualifications for sanitarian aides.

We have no objections at all to the move towards utilizing the services of these people within the public health department system - in fact we fully support it. As you have realized, however, some standards need to be established so that these technicians, or aides, will be able to fit into the environmental health program with the greatest possible degree of efficiency. To this end, the National Environmental Health Association conducted a workshop on education for technicians in 1970, and a report of that meeting is enclosed herewith, along with a few articles on the subject and a list of schools offering the associate degree in environmental health technology.

If we can assist further, please feel free to call on us again. We'd be glad to help, and we'd like to hear about the results of your research.

Sincerely,

Nick Pohlit
Nicholas Pohlit, M.P.H., R.S.
Executive Director

NP:sf
Encl.

THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

THE SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF
ENVIRONMENTAL SCIENCES AND ENGINEERING

Chapel Hill 27514
919: 966-1171

February 5, 1973

Mr. Harold C. Pengra
Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

Dean Greenberg has asked me to respond to your letter of January 15.

You might try the following sources for information concerning basic training of sanitarian aides:

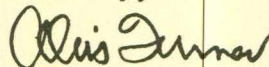
Two Year Curriculum: Environmental Health Technicians, a conference report, National Environmental Health Association (1970).

Indian Health Service, Chart of Illustrative Work Examples for Sanitarian Aid/Technician Positions at each grade level, U.S. Public Health Service (1967).

A guideline for the Development of a Community Environmental Health Program and a Two Year Associate Degree Training Program For Environmental Health Technicians, New Health Roles, School of Public Health, University of North Carolina (enclosed).

I hope this information will be of help to you.

Sincerely,



Alvis G. Turner, Ph.D.
Assistant Professor

AGT:em

**The
University of Oklahoma Health Sciences Center**

Post Office Box 26901 Oklahoma City, Oklahoma 73190

DEPARTMENT OF
ENVIRONMENTAL HEALTH

641 N.E. 15th Street

January 29, 1973

Harold C. Pengra, R. S.
Coordinator
Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

Your letter of January 15, to the Dean of the College of Health has been forwarded to the Department of Environmental Health for action. Unfortunately, we know of no literature review on the subject of "Competency Needs of Sanitarian Aides". We do, however, suggest that you contact Dr. Robert V. Garner, Oklahoma Environmental Information and Media Center, East Central State College, Ada, Oklahoma 74820.

If we can be of any other assistance, please feel free to contact the department directly.

Sincerely,

C H Lawrence

C. H. Lawrence, Ph.D.
Associate Professor

CHL/sj

EAST CENTRAL SCHOOL OF ENVIRONMENTAL SCIENCE
EAST CENTRAL STATE COLLEGE
ADA, OKLAHOMA 74820

February 7, 1973

Mr. Harold C. Pengra
Coordinator
Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

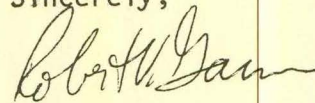
Dear Mr. Pengra:

Re: Your letter of
February 2, 1973

Our personnel in the School of Environmental Science has been interested in the program you mentioned also. However, in their search for this same information very little has been found. In most of what has been uncovered has been just personal conversations with employed Sanitarians. From their interviews it appears that the working interest of being employed determines the competency of any Aides that he might employ.

Sorry we are unable to provide you with greater assistance.

Sincerely,



Robert V. Garner
Dean

RVG:cs

TULANE UNIVERSITY

School of Public Health and Tropical Medicine

NEW ORLEANS, LA. 70118

Department of Environmental Health

Civil Engineering Building

6823 St. Charles Avenue

February 3, 1973

Mr. Harold C. Pengra, R.S., Coordinator
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

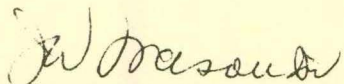
Dear Mr. Pengra,

Dr. Goldsmith forwarded your letter of January 15, 1973, requesting information on determining "competency needs" of sanitation aides. To my knowledge, the Florida System of community colleges offers a program in air and water pollution technology at the Brevard County Community College - which is (or was) operated with the help of the Department of Environmental Engineering at the University of Florida in Gainesville, Florida. Dr. Robert Sholtes was involved in the early phases and, I assume they considered "competency needs" in designing their curricula. Bob has since left the University, however, they should be able to provide you with a forwarding address.

Tulane has not been engaged in the area, thus we have no first hand information to offer.

Sorry that we could not be of more help.

Sincerely,



J.W. Mason, D.Sc. Hyg.
Assoc. Professor
Acting Chairman
Department of Environmental Health Sciences

JWM;jw

January 31, 1973

Mr. Harold C. Pengra
Coordinator, Environmental Sanitation
Iowa Western Community College
2700 College Road
Council Bluffs, Iowa 51501

Dear Mr. Pengra:

Your letter regarding the competency needs of sanitarian aides has been forwarded to me for reply. Since we do not, at the University, offer any particular curriculum relating to sanitarian aides, it was necessary for me to do a little inquiring with other colleges in this area.

The first suggestion I would make is that you write to the National Environmental Health Association, 1600 Pennsylvania Street, Denver, Colorado 80203, and request a copy of their "Recommended Qualifications and Employment Standards For Environmental Health Personnel." This will give some background information and help you evaluate some of the environmental health needs for your study.

Last week the faculty of the local Anoka County College and Hennepin Junior College met with us and representatives from industry to determine the interest for sanitarian aides or trainees. It is our feeling that, unless it's a large health agency whereby these aides can be used for sampling, nuisances and so forth, there appears to be no need for them. However, it was interesting to note the interests of industry, (represented by Northern States Power Company, General Mills, Honeywell, Pollution Curbs and the State Pollution Control Agency) apparently are different. Each industry had their own course requirements depending upon, for instance, a sampling program of air, water, waste, computer needs, etc., and it was difficult to put all of these courses into a two-year college level course. In any case, there is some interest from industry for this type of personnel.

Some of the faculty of the above-named colleges will be proceeding with this program and we should have further information from them.

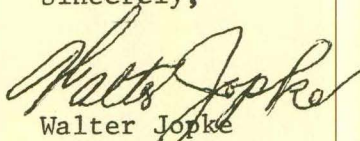
Mr. Harold C. Pengra

-2-

January 31, 1973

Sorry that I do not have any more information. However, I hope that this information will be of some help.

Sincerely,



Walter Jopke
Assistant Professor
Division of Environmental
Health and Safety
University Health Service

WHJ:ner

APPENDIX C
SURVEY INSTRUMENT

IOWA WESTERN COMMUNITY COLLEGE

ROBERT D. LOOFT, *Superintendent*

Administrative Offices
and
Council Bluffs Campus
2700 College Road
Council Bluffs, Iowa 51501
Telephone (712) 328-3831

Clarinda Campus
923 East Washington St.
Clarinda, Iowa 51632
Telephone (712) 542-5117

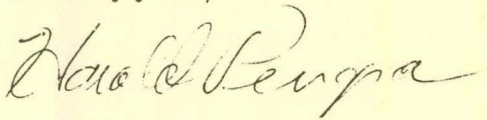
This College is conducting a research project to determine the job competency needs of a sanitarian aide. A study has revealed that further research is necessary in this area and the Iowa State Department of Public Instruction has asked Iowa Western Community College to conduct this research. It is felt that a competency needs study is required to strengthen the curriculum in environmental sanitation courses at the high school and community college level.

You have been selected as a participant in this study because of your position in the public health or environmental programs in your community. The attached survey instrument should not take more than fifteen minutes of your time. Won't you please help us?

The questions on the survey instrument relate to only four possible areas of the sanitarian aide's work. Additional questionnaires will be designed to cover other possible areas of a sanitarian aide's work assignments.

Your immediate response in the enclosed postage-free envelope is requested and gratefully acknowledged in advance.

Sincerely yours,



Harold Pengra
Project Director
IOWA WESTERN COMMUNITY COLLEGE

HP/llm

Enclosure

Sanitarian Aide Competency Needs Survey
IOWA WESTERN COMMUNITY COLLEGE
 2700 College Road
 Council Bluffs, Iowa 51501

Phase I

For the purposes of this study, the term Sanitarian Aide is considered to be a person with less than a Bachelor's degree who works independently in the field at a para-professional level under the direct supervision of the professional.

Column A— In my opinion, it is highly necessary for the Sanitarian Aide to possess a high degree of proficiency in the skill or attribute listed.

Column B— In my opinion, it would be desirable for the Sanitarian Aide to possess some degree of proficiency in the skill or attribute listed.

Column C— In my opinion, the skill or attribute listed is not applicable to the duties and responsibilities performed by a Sanitarian Aide.

- A. Highly Necessary
- B. Desirable
- C. Not Applicable

Check only one column for each skill or attribute listed.

	A	B	C
GENERAL ATTRIBUTES			
1 Knowledge of codes, laws, rules & regulations pertaining to work			
2 Ability with public relations and with public			
3 Ability to write meaningful and intelligent reports			
4 Good personal hygiene			
5 Dependable work habits			
6 Knowledge of the professional jargon of the discipline			
7 Understand methods of gathering and preserving evidence			
8 Knowledge of enforcement procedures			
9 Ability to be a court witness			
10 Ability to cooperate and work with other departments and agencies			
RESPONSIBILITIES PERTAINING TO PRIVATE WATER SUPPLIES			
11 Ability to calculate volumes of water required at an installation			
12 Ability to calculate peak load of a water system			
13 Ability to size systems to meet load requirements			
14 Ability to recognize need of disinfection			
15 Ability to run field test for disinfectant residual			
16 Ability to recognize different types of wells			
17 Ability to recognize cross connections			
18 Know the sanitary precautions for each type of well			
19 Know how to run a "yield and drawdown" test			
20 Know how to disinfect a water source and system			
21 Understand spring development as a domestic water source			
22 Ability to inspect and recognize each type of well construction			
23 Know the possible routes of contamination in each type of well			
24 Ability to sample water supplies			
25 Ability to interpret water supply analysis reports			
26 Know the procedure to seal an abandoned well			
27 Know the public health hazards of a contaminated system			

		A	B	C
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RESPONSIBILITIES PERTAINING TO PRIVATE SEWAGE DISPOSAL SYSTEMS

28	Know and have the ability to apply standards to privies			
29	Ability to accomplish percolation tests			
30	Know the relationship between soil types and effluent absorption			
31	Ability to read sanitary plot maps and simple blueprints			
32	Ability to design and size systems to fit existing conditions			
33	Ability to inspect existing systems			
34	Ability to recognize acceptable installation			
35	Know the basis of lagoon operation			
36	Ability to size lagoons to a given system			
37	Know lagoon safety requirements			
38	Know lagoon maintenance requirements			
39	Ability to recognize system failure			
40	Know the public health hazards of waste disposal system failure			

RESPONSIBILITIES PERTAINING TO NUISANCE COMPLAINTS

41	Ability to recognize public health aspects of a nuisance			
42	Ability to assist pet owners in fly, rodent, and odor control			
43	Ability to differentiate between sanitary and unsanitary conditions			
44	Know areas of a community which excludes specific classes of animals by zoning			
45	Ability to recognize sex of animals and fowl			
46	Ability to estimate approximate age of fowl			
47	Know the procedures in processing citizen-initiated complaints			
48	Ability to recognize noxious weeds			
49	Know proper use of herbicides and pesticides in nuisance control			
50	Ability to recognize all stages of life cycles of disease vectors			

RESPONSIBILITIES PERTAINING TO EATING AND DRINKING ESTABLISHMENTS AND VENDING OPERATIONS

51	Understand the S.N.F. standards relative to food service equipment			
52	Ability to run field tests on dishwashing machines and sanitizing solutions			
53	Ability to inspect eating and drinking establishments under applicable codes			
54	Ability to recognize cross connections in plumbing			
55	Ability to size kitchen ventilation systems			
56	Understand sanitization of multi-use utensils			
57	Recognize acceptable single service utensils			
58	Ability to evaluate location of vending machines			
59	Ability to evaluate cleanliness of vending machines			
60	Understand control of pests in food service establishments			
61	Recognize hazardous chemicals and know their uses			
62	Understand the control of pathogenic organisms in food service establishments			
63	Recognize acceptable refrigeration facilities			
64	Recognize safe and unsafe food handling procedures			
65	Recognize good personal hygiene			

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