A PROFILE AND TRAINING NEEDS ASSESSMENT OF COMMUNITY/PUBLIC HEALTH PROFESSIONALS IN WASHINGTON STATE

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and
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Thanks to the 1316 individuals who returned completed questionnaires.

Executive Summary

This report presents the findings of the first phase of a survey profiling community/public health professionals in Washington state and delineating their training needs. These findings indicate that although the distribution of community/public health professionals varies among organizational settings, the training needs within these organizations and among professional groups are similar.

For the purposes of this research, public health is defined as a broad array of organized activities directed at preventing illness, injury and disability, and promoting physical and mental health. Community/public health professionals include all those individuals who provide these services on a population level, or who provide health promotion and disease prevention services to individuals.

This research was conducted between April and November 1997. The survey sample included all professional employees of the Washington State Department of Health (DOH), thirty-one (31) of the thirty-three (33) local health departments (LHDs) in Washington state, and approximately half the community, migrant and Indian clinics in the State. A mail questionnaire was sent to 2349 professional employees, 1316 surveys were completed and returned, for an overall response rate of fifty-six (56) percent.

The profile that emerges of these community/public health professionals is:

- They are predominately White (85%) and college educated (89%).
- About a quarter speak a language in addition to English (including almost half of clinic employees).
- They have worked in community/public health for an average of 8.8 years with almost a third having worked in this field for over ten years.
- There is great variation in the distribution of occupations among the three organizational settings. For example DOH has only about nine (9) percent clinicians, LHDs forty-three (43) percent and clinics have about eighty (80) percent clinicians.
- Over twice as many respondents have managerial/supervisory responsibilities (49%), as those who categorize themselves as managers/administrators (22%).
- Almost three-quarters of respondents engage in two or more occupational activities, and about half engage in three or more activities (e.g., evaluation and research).

Communication skills are the most highly rated training needs. The top four training needs identified, across organizations and occupations, are:

- interpersonal communication,
- cross-cultural and cross-age communication,
- electronic communication, and
- participatory teaching/training skills.

Other training topics that are rated highly include: group facilitation, health promotion, quality improvement and assurance, written communication, community/program planning, and community involvement/mobilization. In addition, data analysis and utilization and written communication are highly rated by health professionals other than clinicians.

The first choice method of receiving training is **on-site with an instructor,** with regional training with an instructor second, and mediated training methods only selected by a small number of respondents.

Although the survey findings identify categories of training needs and preferred modes of training delivery, a more in-depth examination of training topics is needed prior to the design and implementation of training programs. Focus groups, with community/public health professionals, could be used to delineate the specific content of highly rated training topics (e.g., interpersonal communication). Likewise these groups could be used to explore circumstances in which professionals, who prefer in-person training, would positively view mediated training (e.g., computer-based training).

Finally, this survey needs to be implemented among all organizations that provide community/public health services in Washington state. Although DOH, LHDs and clinics are central components of the community/public health system, many other organizations are also part of that system (e.g., hospitals, other State agencies such as the Department of Social and Health Services, and non-profit organizations). The information provided by a truly comprehensive profile and training needs assessment could be used to increase the efficiency and effectiveness of community/public health professionals by identifying common areas where training is needed, and supporting training coordination and collaboration among organizations and professional groups.

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Background and Methods

This report presents the findings of the first phase of a survey profiling community/public health professionals in Washington State and delineating their training needs. For the purposes of this research, public health is defined as a broad array of organized activities directed at preventing illness, injury and disability, and promoting physical and mental health. Community/public health professionals include all those individuals who provide these services on a population level, or who provide health promotion and disease prevention services to individuals.

This is a time of change in the health care system. The traditional roles of the public health professions are changing as direct patient care is de-emphasized and assessment and quality assurance roles are highlighted. This shift in roles is broadening the spectrum of organizations which provide community/public health services so that many private and non-profit providers, such as health maintenance organizations and managed care plans, are assuming responsibilities that were once entirely within the domain of governmental public health agencies. This research contributes to an understanding of who is currently providing community/public health in this State, and how those individuals perceive their training needs. The findings of this survey are also a first step in exploring new models for providing effective training including training across organizations and professional categories.

This research was conducted between April and November 1997. It is based on a similar survey conducted by the Center for Health Policy Studies, School of Public Health, The University of Texas Houston Health Science Center, 1996. The Texas work drew on the American Public Health Association's (APHA) effort to construct a comprehensive data system for monitoring public health personnel in the United States. Although both the Texas and Washington studies focus on public health, the primary purpose of the Texas study is to identify Workforce shortage areas while the central focus of the Washington study is to identify training needs. Still, there remains enough similarities in the two studies that meaningful comparisons could be made.

Survey Sample

The findings in this report include a profile and training needs assessment of professionals, in Washington State, who are employed by:

- Washington State Department of Health (DOH),
- local health departments (LHDs), and
- community, migrant and Indian clinics.

DOH, LHDs and clinics are included in the first round of this survey because professional employees in these organizations have been traditionally defined as the core providers of public health services.

Other organizations that employ a significant number of community/public health professionals, and should be included in next implementation of this survey, include:

- State agencies such as the Department of Social and Health Services and the Department of Ecology,
- hospitals, health maintenance organizations and health plans (e.g., managed care),
- private, nonprofit or voluntary agencies (e.g., American Cancer Society).

Since a comprehensive list of private non-profit and voluntary health organizations in Washington state does not currently exist, the first phase of this project included starting to compile such as list. The county-specific list, to date, was distributed to identified organizations. The next phase of this effort should include continued follow-up to develop a comprehensive list of such organizations in this State.

There are two additional groups that should be re-evaluated for inclusion in the next round of the survey - employee health organizations and school health services. Employee health services were not initially included because the services they offer are not population-based. However, large organizations (e.g., Boeing) provide considerable health services to numerous employees, including wellness and prevention services which are conventionally within the domain of public health. It, therefore, may be appropriate to include these organizations in this research.

Public educational institutions are not included in this research because the training needs of professionals in educational settings is different from the needs of those in other community/public health settings. However public schools provide a great deal of wellness and prevention services to children and adolescents. A greater understanding of how their training needs mesh with those of other community/public health professionals could be very beneficial. At a minimum, opportunities to compare existing data should be explored and perhaps a training needs assessment, adapted for public school settings, could be developed.

Questionnaire Development

The basic instrument design is based on the questionnaire developed by the Center for Health Policy Studies, School of Public Health, the University of Texas Houston Health Science Center. However, many revisions to the questionnaire were made to accommodate Washington's emphasis on the identification of training needs. The Washington questionnaire represents a collaborative effort of the Northwest Center for Public Health Practice and the Washington State Department of Health (DOH), along with feedback from representatives of local health departments and community clinics. In

addition, the questionnaire reflects the Public Health Improvement Plan (PHIP) and recent efforts of the Education and Training Activities Committee (ETAC). Before administering the questionnaire, it was also pretested with members of the target population and revised according to their recommendations. (A copy of the questionnaire can be obtained from the Northwest Center for Public Health Practice, University of Washington.)

Methods

Overall, the survey response rate is fifty-six (56) percent. The survey was conducted as a mail questionnaire to professional employees of the State Department of Health (DOH), local health departments (LHDs) and community, migrant and American Indian clinics. Upon request, each participating organization provided a list of their professional employees. Professional employees were identified by the employing organization as anyone in a position which requires at least a four year college degree.

The sample is stratified among the three major groups: DOH, LHDs and clinics. In addition, the sample among local health departments is further stratified by the number of employees in the health department and its location in either Eastern or Western Washington. Professional employees in each organization are sampled using either a random selection model or a one-hundred percent sample, depending on the size of the organization. Every effort was made to ensure that the number of respondents for each subgroup would be large enough to conduct meaningful sub-analyses.

The questionnaire was mailed directly to each selected professional employee and a reminder postcard was mailed about ten days after the questionnaire. In some cases, a given organization or subgroup of organizations had a particularly low response rate and so the questionnaire was mailed a second time. Overall, the survey response rate is fifty-six (56) percent. Table I provides the number of employees who received questionnaires and their response rates by type of organization.

Table I
Questionnaire Response Rate

	Number of Professional Employees	Number of Questionnaires Sent	Number of Completed Questionnaires	Response Rate
WA State Dept. of Health	**697**	**393**	**264**	**67%**
Local Health Departments*	**1843**	**1150**	**661**	**57%**
Sea King	**729**	**298**	**151**	**51%**
Large Western WA	**512**	**250**	**149**	**60%**
Small Western WA	**173**	**173**	**97**	**56%**
Large Eastern WA	**220**	**220**	**137**	**62%**
Small Eastern WA	**209**	**209**	**127**	**61%**
Clinics**	**806**	**806**	**391**	**49%**
Total	**3346**	**2349**	**1316**	**56%**

*Of the 33 local health departments, all participated except for two small health departments. SeaKing is the only large local health department. Medium local health departments have more than 50 and less than 150 professional employees. Small local health departments have up to 50 professional employees.

**Approximately 50% of the clinics in Washington State participated in this survey including the largest clinics such as SeaMar, Yakima Valley Farmworkers clinics and Puget Sound Neighborhood clinics. Many clinics that did not participate were very small (less than five professional employees).

Profile Findings

The demographic characteristics of community/public health professionals responding to this survey are summarized in Table II. Of note:

- About eighty-nine (89) percent of respondents have at least a bachelors degree including about a quarter with a master's degree and over ten percent with a doctorate or medical degree.

- Almost three-quarters of respondents reported that they were licensed, certified or registered in a health-related specialty. This is a high level of certification, particularly since some of respondents are in fields (e.g., health planning) that do not have licensure or certification.

- Over forty percent of DOH respondents are males, while only about a quarter of the respondents from LHDs and clinics are males.

- Over eighty-five (85) percent of respondents identify themselves as "White". This is fairly consistent among DOH, LHD and clinic professional employees.

- Over a quarter of respondents speak a language other than English. Among clinic respondents, almost half speak a second language.

Table II
Demographic Characteristics
(Respondents)

Characteristic		All Respondents	DOH	Local Health Departments	Clinics
Highest Level of Education Completed	Less Than High School	0.1%	0.0%	0.0%	0.3%
	High School of Equivalent	2.7%	6.7%	1.9%	1.6%
	Associate, 2-year Degree	8.0%	5.9%	6.7%	11.5%
	Bachelor's Degree	50.7%	43.3%	62.2%	36.9%
	Master's Degree	25.8%	37.0%	23.9%	20.9%
	Doctorate*	11.5%	6.7%	3.6%	28.0%
	Other	1.2%	0.4%	1.7%	0.8%
Licensed, Certified, or Registered in a Health-Related Specialty	Yes	72.8%	35.6%	77.7%	89.8%
	No	27.2%	64.4%	22.3%	10.2%
Gender	Male	28.4%	40.8%	24.1%	27.4%
	Female	71.6%	59.2%	75.9%	72.6%
Age	Mean Age	43	45	44	41
	Under Age 35	19.3%	16.0%	15.6%	28.1%
	Ages 35-44	33.8%	29.2%	34.9%	35.3%
	Ages 45-54	36.4%	40.9%	39.7%	27.5%
	Ages 55-64	9.8%	13.6%	9.0%	8.3%
	Over Age 64	0.7%	0.4%	0.8%	0.8%
Race/Ethnicity	American Indian or Alaskan Native	1.0%	0.8%	0.3%	2.3%
	Asian American or Pacific Islander	5.0%	3.5%	4.5%	6.8%
	Black/African American	1.9%	2.8%	2.0%	1.0%
	Hispanic/Latino(a)	3.4%	3.1%	1.2%	7.3%
	White	86.7%	87.0%	90.0%	80.7%
	Other	2.0%	2.8%	1.9%	1.8%
Speak Any Language Besides English?	Yes	28.6%	19.9%	21.6%	45.7%
	No	71.4%	80.1%	78.4%	54.3%
		N=1326	n=264	n=661	n=391

*The doctorate category includes some individuals with professional doctorates (e.g., MDs), as well as those whose degrees are in academic fields (PhDs).

The mean length of time that respondents have worked as community/public health professionals is 8.8 years. As illustrated in Table III, over a third of all respondents, in each organizational setting, have been employed as community/public health professionals for five years or less, while almost another third are "long-term" community/public health professionals having worked in the field for over ten years. DOH has the highest percentage of "long-term" professionals, while the clinics have the highest percentage of professionals with short tenure in community/public health.

Table III
Community/Public Health Experience

Years in Public/ Community Health	All Respondents	Department of Health	Local Health Departments	Clinics
1-5 years	38.0%	32.6%	32.4%	51.9%
6-10 years	30.4%	28.6%	32.0%	29.0%
11-15 years	12.1%	9.4%	15.0%	8.6%
16-20 years	10.5%	12.5%	11.5%	6.6%
21+ years	9.0%	16.9%	9.1%	3.9%
Total	N=1242	n=224	n=646	n=362
Mean Years	8.8	9.7	9.7	6.6

Table IV describes survey respondents by occupational categories. In order to clarify the differences among occupational categories they have been condensed into eight groups. Table V shows the distribution of survey respondents in these eight grouped occupational categories.

Overall the largest group of respondents, almost thirty (30) percent, identify themselves as medical clinicians (e.g., MDs and RNs); however DOH has only five percent, LHDs twenty-eight (28) percent and clinics forty-five (45) percent. The trend is the same for non-medical clinicians (e.g., psychologists and social workers) - the lowest percentage in DOH and the highest percentage in the clinics. However, the trend is reversed for health planners/communications specialists, managers/administrators and quantitative researchers. In these occupational categories DOH has a much higher percentage of professionals than either the LHDs or the clinics. It is also noteworthy, but not surprising, that the largest percentage of environmental health professionals reside in the LHDs.

Table IV
Distribution of Occupational Categories
(Respondents)

Occupational Category*	All Respondents (%)	All Respondents (f)	Department of Health (%)	Department of Health (f)	Local Health Departments (%)	Local Health Departments (f)	Clinics (%)	Clinics (f)
Administrator	6.2%	(80)	8.4%	(21)	5.2%	(34)	6.2%	(24)
Manager	15.9%	(207)	30.7%	(77)	14.6%	(95)	8.8%	(34)
Auditor, Inspector, or Surveyor	1.7%	(22)	7.6%	(19)	0.5%	(3)	0.0%	-
Behavioral Researcher	0.5%	(6)	0.8%	(2)	0.3%	(2)	0.5%	(2)
Biostatistician, Epidemiologist	1.6%	(21)	4.0%	(10)	1.5%	(10)	0.3%	(1)
Community Organizer/Involvement Specialist	2.2%	(28)	0.0%	-	3.7%	(24)	0.8%	(3)
Disease Investigator	0.8%	(10)	0.4%	(1)	1.4%	(9)	0.0%	-
Environmental Health Specialist	12.2%	(159)	8.4%	(21)	20.0%	(136)	0.0%	-
Health Care Consultant	3.5%	(45)	10.4%	(26)	2.6%	(17)	0.5%	(2)
Health Communications Specialist	2.1%	(27)	2.8%	(7)	2.9%	(19)	0.3%	(1)
Health Planner/Policy Analyst	1.7%	(22)	6.4%	(16)	0.9%	(6)	0.0%	-
Information/Computer Management**	0.5%	(6)	1.6%	(4)	0.9%	(2)	0.0%	-
Laboratory Scientist	3.5%	(46)	9.6%	(24)	2.0%	(13)	2.3%	(9)
Medical Clinicians	29.0%	(377)	5.2%	(13)	28.4%	(185)	45.4%	(176)
Non-Medical Clinicians	18.0%	(237)	3.6%	(9)	14.1%	(92)	34.8%	(135)
Occupational Health Specialist	0.3%	(4)	0.0%	-	0.5%	(3)	0.3%	(1)
Other	0.2%	(4)	0.4%	(1)	0.3%	(2)	0.0%	-
		N=1300		n=251		n=652		n=388

*See definitions on page 14.

**Information/Computer Management was the only write-in category that received more than one response.

Occupational Categories: Definitions

Administrator: *Plans, directs, manages and evaluates the use of health services resources and personnel on an agency/organizational level. Includes medical directors and health officers.*

Manager: *Implements and evaluates community/public health programs including budgeting, data management, staff coordination/supervision, and contracts/fiscal monitoring.*

Auditor, Inspector or Surveyor: *Audits, inspects and surveys programs, institutions, equipment, products and personnel, using approved standards. Includes facilities and financial contract auditing.*

Behavioral Researcher: *Uses social and behavioral science research methods to develop and conduct research designed to prevent, resolve or ameliorate health problems. May include anthropologists, economists, sociologists, physicians, etc.*

Biostatistician, Epidemiologist: *Uses mathematical and/or epidemiological models for compilation, analyses and reporting of information on health status, program efficacy, etc.*

Community Organizer/Involvement Specialist: *Works directly with community groups to assess needs, build coalitions, and develop, implement and evaluate programs addressing health needs.*

Disease Investigator: *Assists biostatisticians, epidemiologists or behavioral/social scientists in developing or conducting research and incorporating findings into programs.*

Environmental Health Specialist or Environmental Engineer: *Applies environmental health and engineering principles to prevent and control environmental health hazards. Includes sanitarians, environmental health specialists and technicians, and sanitary, chemical and civil engineers.*

Health Care Consultant: *Provides technical assistance, training and consultation to individuals and/or groups in the aforementioned job categories.*

Health Communications Specialist: *Develops and implements internal and external communications strategies to disseminate health information, programs and policies via channels including mass media, computer technology, and written reports and information.*

Health Planner/Policy Analyst: *Analyzes population needs, program and legislative policies, and allocation of health resources in relationship to community/public health goals and objectives.*

Laboratory Scientist or Technician: *Plans, designs or implements laboratory tests and procedures. Includes microbiologists, chemists, toxicologists, immunologists, etc. Also includes those who assist laboratory scientists in performing the aforementioned functions.*

Medical Clinician or Clinical Consultant: *Provides medical clinical care in community/public health setting or serves as a medical consultant to other providers. Includes physicians, nurses and pharmacists.*

Non-Medical Clinician or Clinical Consultant: *Provides non-medical clinical care in community/public health settings or serves as a consultant to other providers. Includes psychologists, social workers, counselors and patient educators.*

Occupational Health Specialist: *Reviews, analyzes and evaluates work environments or designs programs to prevent disease or correct hazards. Includes industrial hygienists, safety specialists, etc.*

Table V
Distribution of Grouped Occupational Categories
(Respondents)

Grouped Occupational Category*	All Respondents (%)	(f)	Department of Health (%)	(f)	Local Health Departments (%)	(f)	Clinics (%)	(f)
Auditor/Inspector/Surveyor	1.7%	(22)	7.6%	(19)	0.5%	(3)	0.0%	-
Environmental/Occupational Health	12.5%	(163)	8.4%	(21)	21.3%	(139)	0.3%	(1)
Health Planners/Communication Specialist	9.4%	(122)	19.5%	(49)	10.1%	(66)	1.5%	(6)
Lab Scientist	3.5%	(46)	9.6%	(24)	2.0%	(13)	2.3%	(9)
Manager/Administrator	22.1%	(287)	39.0%	(98)	19.8%	(129)	14.9%	(58)
Medical Clinicians	29.0%	(377)	5.2%	(13)	28.4%	(185)	45.4%	(176)
Non-Medical Clinicians	18.2%	(237)	3.6%	(9)	14.1%	(92)	34.8%	(135)
Quantitative Researcher	3.3%	(43)	6.8%	(17)	3.5%	(23)	0.8%	(3)
Other	0.2%	(3)	0.4%	(1)	0.3%	(2)	0.0%	-
		N=1300		n=251		n=652		n=388

***Grouped occupational categories definitions:**

Auditor/Inspector/Surveyor = unchanged

Environmental/Occupational Health + occupational health specialist + environmental engineer

Health Planner/Communication Specialist = health communication + community organizer/involvement specialist + health care consultant + health planner/policy analyst

Lab Scientist = unchanged

Manager/Administrator = manager + administrator

Medical Clinicians = clinicians with medically-related degrees (e.g., MDs and RNs)

Non-Medical Clinicians = clinicians with professional degrees (e.g., psychologists and social workers)

Quantitative Researcher = biostatistician/epidemiologist + disease investigator + behavioral researcher + information/computer manager

As illustrated in Table VI, in all professional groups at least two-thirds of respondents have at least a bachelors degree. Four occupational categories had at least fifteen (15) percent of respondents with less than a bachelors degree: information/computer management, non-medical clinicians, health care consultants and managers. The highest educational level is attained by four occupational categories in which at least one quarter of respondents had a PhD or MD: administrators, behavioral researchers, biostatisticians/epidemiologists, and medical clinicians. (See Table VI.)

The mean number of years of managerial/supervisory responsibility among respondents is seven years. Although only twenty-two (22) percent of survey respondents categorize themselves as administrators or managers, almost half of respondents report that they have some supervisory responsibility. Chart I illustrates that for each employer type the percentage of professionals who have managerial/supervisory responsibility is much greater than the percentage of those who identify themselves as managers or administrators. (See Chart I.) Chart II illustrates the varying extent of managerial/supervisory responsibility among professionals in each occupational category.

Table VI
Highest Education Level Attained by Occupational Category
(All Respondents)

Occupational Category	High School	Associate	Bachelor	Master	Doctorate	Other	n =
Administrator	1.3%	7.6%	29.1%	36.7%	**24.1%**	1.3%	79
Manager	***7.1%***	***8.1%***	46.2%	34.0%	3.6%	1.0%	197
Auditor, Inspector, or Surveyor	0.0%	0.0%	45.5%	45.5%	9.1%	0.0%	22
Behavioral Researcher	0.0%	0.0%	0.0%	50.0%	**50.0%**	0.0%	6
Biostatistician, Epidemiologist	0.0%	0.0%	38.1%	28.6%	**28.6%**	4.8%	21
Community Organizer/Involvement Specialist	0.0%	0.0%	44.4%	48.1%	0.0%	7.4%	27
Disease Investigator	0.0%	0.0%	66.7%	33.3%	0.0%	0.0%	9
Environmental Health Specialist	1.9%	1.3%	74.4%	21.8%	0.6%	0.0%	156
Health Care Consultant	***2.3%***	***20.9%***	46.5%	27.9%	2.3%	0.0%	43
Health Communications Specialist	0.0%	0.0%	73.1%	26.9%	0.0%	0.0%	26
Health Planner/Policy Analyst	4.5%	4.5%	18.2%	63.6%	9.1%	0.0%	22
Information/Computer Management	0.0%	***16.7%***	83.3%	0.0%	0.0%	0.0%	6
Laboratory Scientist	4.5%	6.8%	68.2%	15.9%	2.3%	2.3%	44
Medical Clinicians	0.0%	0.5%	54.6%	17.1%	**25.5%**	2.2%	368
Non-Medical Clinicians	***4.0%***	***27.0%***	39.8%	24.8%	4.0%	0.4%	226
Occupational Health Specialist	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	4

Occupations with more than 25% of respondents attaining a PhD or MD

Occupations with at least 15% of respondents only attaining a high school or associate degree

Chart I
Comparison of Managerial/Supervisory Responsibility with Administrator/Manager Occupational Status

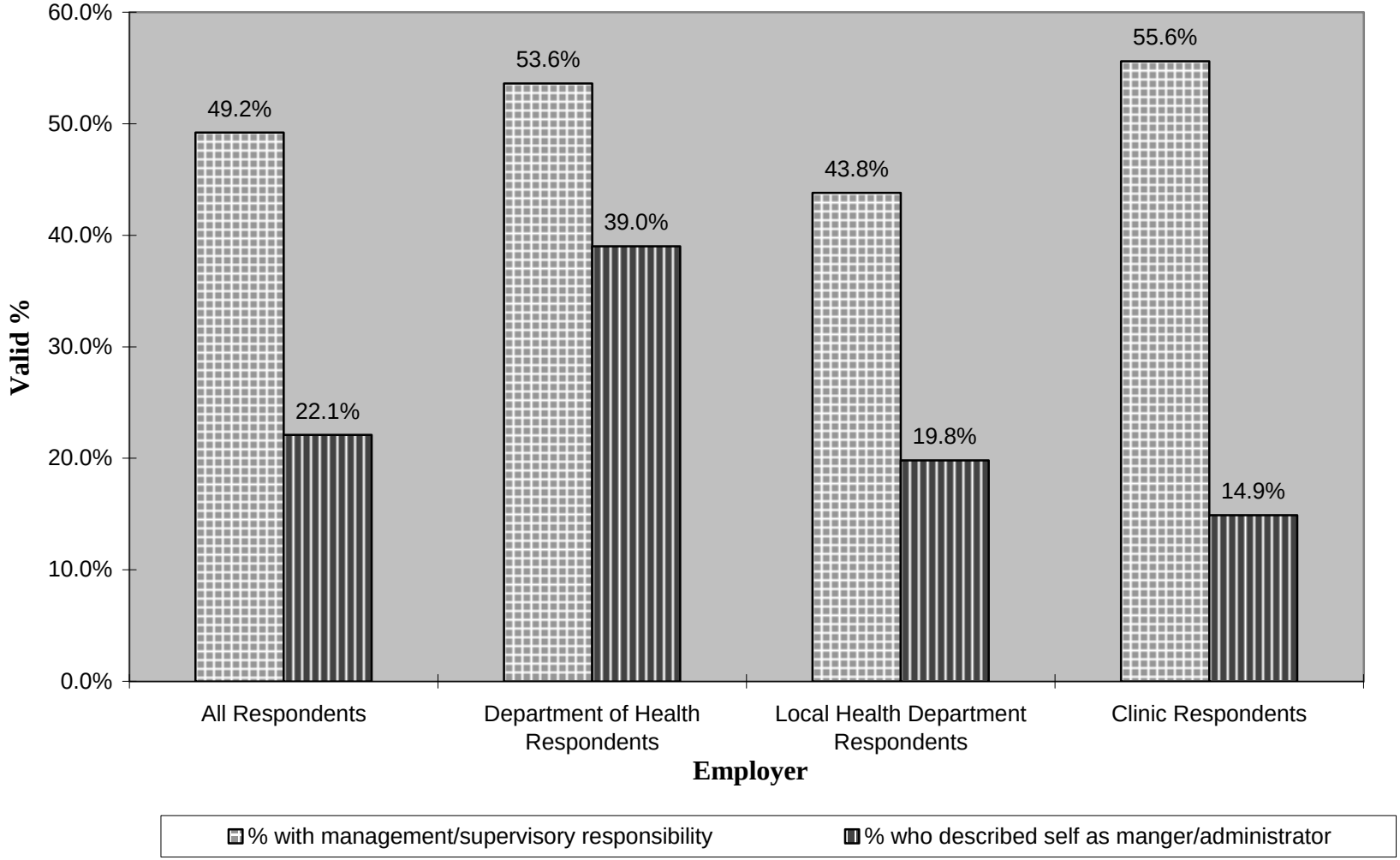
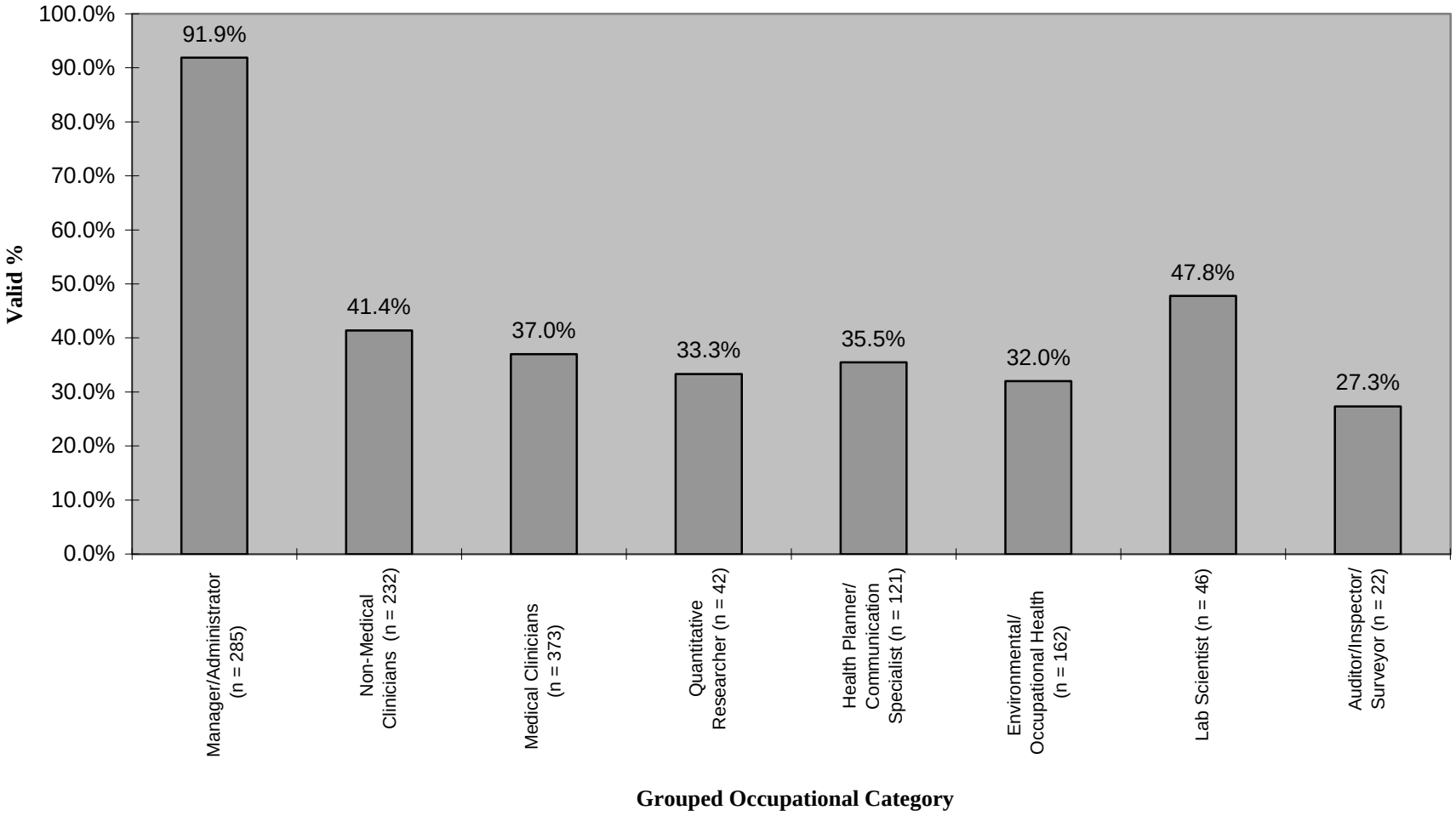
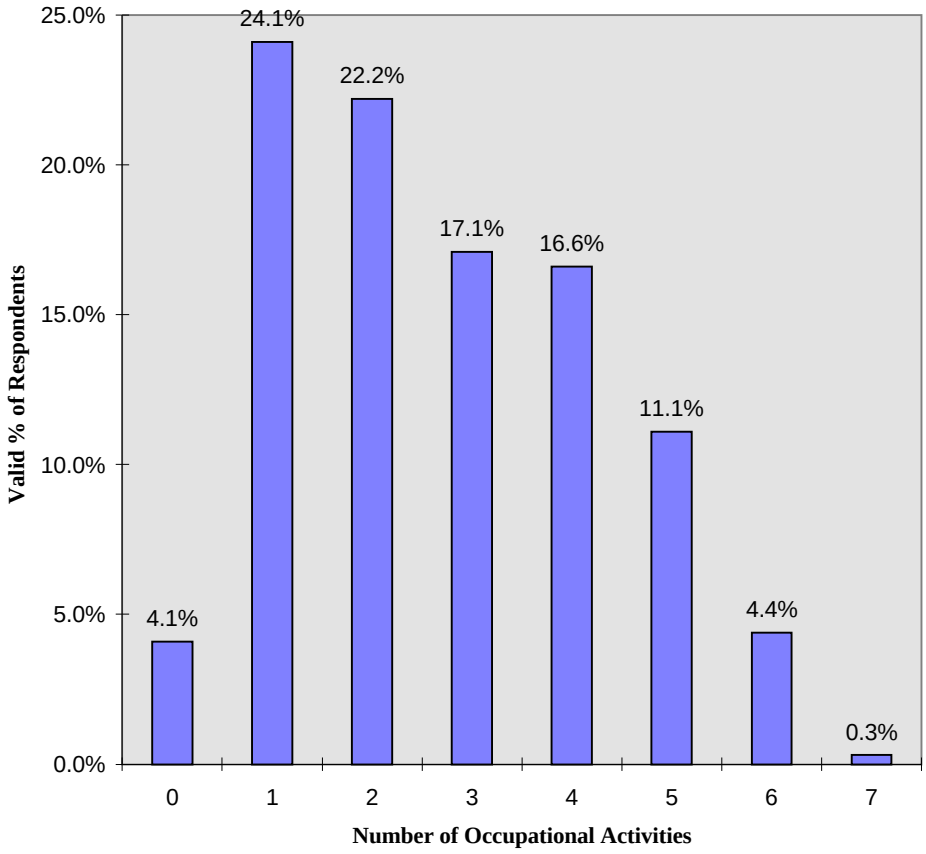


Chart II
Percent of Respondents with Managerial/Supervisory Responsibility by Grouped Occupational Category



Occupational activities are the categories of responsibilities performed by community/public health professionals. (See page 21.) As illustrated in Chart III, almost three-quarters of community/public health professionals engage in two or more occupational activities.

Chart III
Number of Occupational Activities Performed
(All Respondents)



Given that over half of respondents engage in three or more occupational activities, it is not surprising that there is broad participation in most occupational activities. At least thirty (30) percent of all respondents engage in each occupational activity except for technical assistance and information management. (See Table VII.)

Table VII
Occupational Activities Performed

Occupational Activity	Any Time on Activity			
	All Respondents	DOH	Local Health Department	Clinics
Clinical Care, Patient Education and Consultation	**62.3%**	**21.7%**	**58.8%**	**92.8%**
Monitoring, Investigation and Surveillance	**41.7%**	**54.9%**	**52.7%**	**15.2%**
Administration and Management	**56.0%**	**72.6%**	**51.0%**	**54.5%**
Community Involvement and Planning	**43.5%**	**42.2%**	**54.5%**	**25.7%**
Communication, Public Education and Information	**51.5%**	**61.8%**	**60.8%**	**29.6%**
Evaluation and Research	**30.1%**	**47.6%**	**34.8%**	**11.2%**
***Technical Assistance and Information Management**	**1.5%**	**3.7%**	**1.4%**	**0.5%**
	N = 1300	**n = 251**	**n = 652**	**n = 388**

Occupational Activities: Definitions

Clinical Care, Patient Education and Consultation: *Provides, coordinates or consults regarding patient clinical care including education, counseling, nutrition and social work.*

Monitoring, Investigation and Surveillance: *Assesses health and disease indicators for individuals and populations, or environmental quality (e.g., air and water quality, food, sanitation).*

Administration and Management: *Develops policy and regulations, staff coaching/supervision, team building, strategic plan development, financial planning and managing resources, etc.*

Community Involvement and Planning*: Works with communities to conduct needs assessments, develop plans, build coalitions and involve all populations including hard-to-reach groups.*

Communication, Public Education and Information: *Develops and implements internal (organizational) and external (community) information dissemination strategies including mass media, information technology and interpersonal communication.*

Evaluation and Research: *Develops and conducts evaluation of existing community or environmental health programs or policies, or develops and conducts formative research for development of new health programs and policies.*

*Technical Assistance and Information Management: This category was not on the questionnaire. It was created because of frequent write-ins by respondents. Had this category been on the questionnaire, the percentage of people reporting involvement in this activity would certainly have been greater.

Training Needs Findings

As illustrated by Table VIII, **communication skills are the most highly rated** areas of training needs. The five training topics* that are the most highly rated by respondents across occupations and organizational settings are:

1. interpersonal communication,
2. cross-cultural and cross-age communication,
3. electronic communication,
4. participatory teaching/training skills, and
5. group facilitation.

Other training areas that are rated fairly highly include: health promotion, quality improvement and assurance, written communication, community/program planning, and community involvement/mobilization.

An examination of training needs across occupational categories (See Table IX) supports placing top priority for training on:

- interpersonal communication,
- cross-cultural and cross-age communication,
- electronic communication, and
- participatory teaching/training skills.

Each of the five largest occupational categories: (medical clinicians, managers/administrators, non-medical clinicians, environmental/occupational health specialists, and health planners/communication specialists) highly rated these training needs. Group facilitation received less consistent ratings among these occupational categories and is rated lower by respondents from the smaller occupational categories (lab scientist, quantitative researcher and auditor/inspector/surveyor).

It is also worth noting that two additional training topics, data analysis and utilization and written communication, are highly rated by health professionals other than medical and non-medical clinicians.

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* The questionnaire did not define the areas of training except noting that interpersonal communication includes mentoring and coaching, electronic communication includes Internet and INPHO, and group facilitation includes team building and leading meetings.

Finally, in an examination of preferred modes of receiving training, over half of survey respondents selected **on-site training** as their first choice. (See Chart IV) Regional training is also preferred by almost forty (40) percent of respondents, while mediated training, provided by an instructor, including computer-based training, two-way audio/video conferencing and satellite downlink conferencing were selected by only a small number of respondents.

Chart IV
First Choice of Receiving Training
(All Respondents)

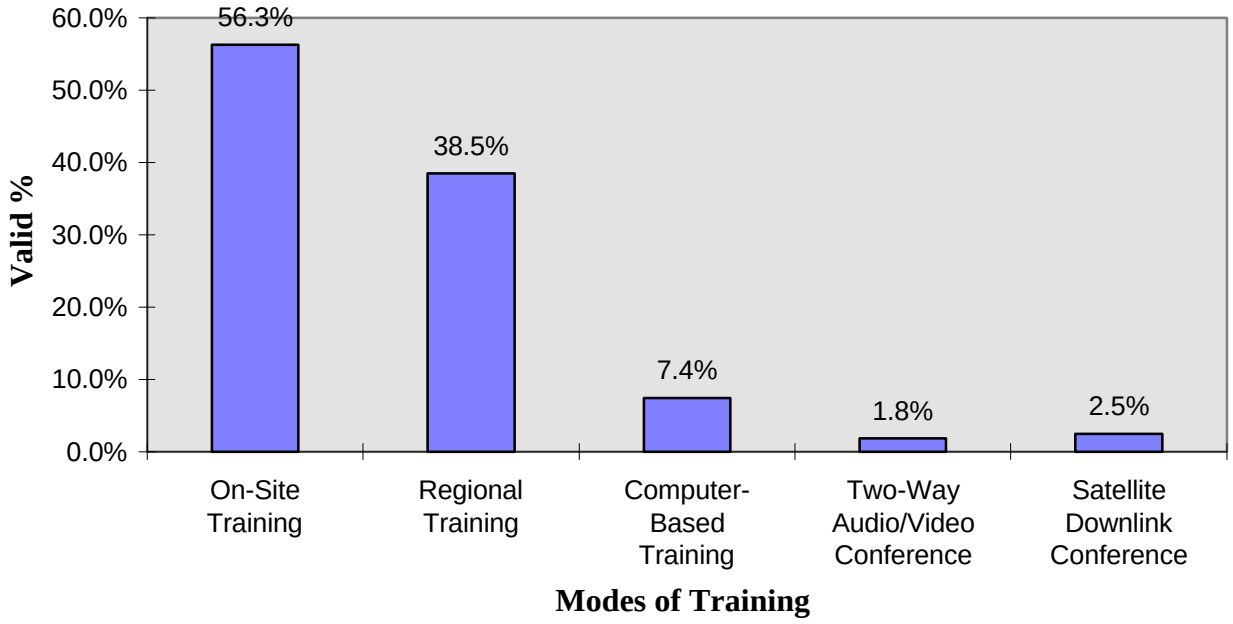

Table VIII
Mean Ratings of Training Topics

Training Topic	All Respondents	DOH	Local Health Departments	Clinics
Clinical Skills	3.7	2.1	3.4	**5.3**
Environmental Health Skills	3.3	2.6	3.4	3.6
Laboratory Skills	2.6	2.2	2.5	3.2
Health Promotion/Disease Prevention	**4.4**	3.5	**4.6**	**4.7**
Overview Community/Public Health System	3.8	3.6	3.9	3.8
Finance and Personnel Management/Budgeting	3.4	3.7	3.4	3.2
***Group Facilitation**	**4.4**	**4.5**	**4.5**	4.3
***Cross-Cultural and Cross-Age Communication**	**4.6**	4.0	**4.6**	**5.0**
***Interpersonal Communication**	**4.7**	**4.6**	**4.7**	**4.7**
Health and Risk Communication Strategies	3.9	3.8	***4.2***	3.5
Mediation and Negotiation	3.9	***4.3***	3.9	3.6
***Participatory Teaching/Training Skills**	**4.5**	***4.2***	**4.7**	**4.5**
Community/Program Planning	***4.2***	3.7	***4.4***	***4.0***
Community/Involvement/Mobilization	***4.2***	3.5	**4.5**	***4.1***
Legislative/Policy Advocacy	3.7	3.8	3.8	3.3
Provision of Technical Assistance	3.7	***4.0***	3.8	3.2
***Electronic Communication**	**4.5**	**4.6**	**4.6**	***4.2***
Data Analysis and Utilization	***4.0***	***4.3***	***4.2***	3.4
Survey Design and Implementation	3.6	3.7	3.9	3.0
Quality Improvement and Assurance	***4.3***	**4.7**	***4.4***	***4.1***
Disease Outbreak Investigation	3.2	2.5	3.7	2.9
Written Communication	***4.2***	***4.3***	**4.5**	3.5

Rated on a scale of 1-7, with 1 = no benefit, 4 = some benefit, and 7 = great benefit:
mean >= 4.5; 4.0 <= ***mean*** <= 4.5

*highest priority topics

Table IX
Mean Rating of Each Training Topic by Grouped Occupational Category
(All Respondents)

Training Topics	Occupational Category: Medical Clinicians	Non-Medical Clinicians	Manager/ Administrator	Environmental/ Occupational Health	Health Planner/ Communication Specialist	Lab Scientist	Quantitative Researcher	Auditor/ Inspector/ Surveyor
Clinical Skills	**5.5**	**5.4**	2.4	1.5	2.3	3.1	2.0	2.4
Environmental Health Skills	3.5	3.3	2.3	**5.8**	2.1	4.0	2.1	3.3
Laboratory Skills	3.1	3.0	1.7	3.0	1.4	**5.9**	1.8	2.3
Health Promotion/Disease Prevention	**5.1**	***4.9***	3.7	4.0	4.3	3.6	4.1	3.0
Overview Community/Public Health System	3.9	3.8	4.1	3.2	4.3	3.1	3.6	3.2
Finance and Personnel Management/Budgeting	2.9	2.8	**5.0**	3.1	3.4	3.2	2.8	3.2
Group Facilitation	4.3	***4.5***	***4.9***	3.9	**5.2**	3.6	3.6	3.7
***Cross-Cultural and Cross-Age Communication**	**5.0**	**5.1**	4.4	4.0	**5.0**	3.4	3.5	3.5
***Interpersonal Communication**	***4.6***	***4.9***	***4.9***	4.2	***4.9***	4.3	3.9	***4.5***
Health and Risk Communication Strategies	3.7	3.7	4.0	4.2	***4.6***	3.2	3.9	4.4
Mediation and Negotiation	3.3	3.8	***4.7***	4.0	4.3	3.1	3.0	4.2
***Participatory Teaching/Training Skills**	***4.6***	***4.9***	4.2	4.4	**5.2**	4.2	4.2	3.8
Community/Program Planning	4.1	4.2	***4.5***	3.7	**5.0**	3.0	4.0	2.8
Community/Involvement/Mobilization	4.4	4.4	4.4	3.5	***4.9***	2.9	4.0	2.3
Legislative/Policy Advocacy	3.6	3.4	4.3	3.1	4.2	2.9	3.1	3.8
Provision of Technical Assistance	3.3	3.4	4.1	3.9	4.1	3.8	4.1	4.0
***Electronic Communication**	4.2	4.3	***4.8***	***4.6***	***4.6***	***4.6***	4.4	4.1
Data Analysis and Utilization	3.5	3.3	***4.7***	4.2	4.4	***4.7***	**5.6**	3.9
Survey Design and Implementation	3.2	3.0	4.0	3.8	***4.6***	3.4	***4.9***	3.3
Quality Improvement and Assurance	4.0	4.1	**5.1**	3.9	***4.6***	***4.9***	4.2	***4.8***
Disease Outbreak Investigation	3.4	3.2	2.7	***4.5***	2.2	3.5	4.3	1.7
Written Communication	3.7	3.9	4.3	***4.7***	***4.9***	4.3	***4.6***	***4.7***
	n = 377	n = 237	n = 287	n = 163	n = 122	n = 46	n = 43	n = 22

Rated on a scale of 1-7, with 1 = no benefit, 4 = some benefit, and 7 = great benefit:
mean >= 5.0; 4.5 <= ***mean*** <= 5.0
*highest priority topics

Discussion/Conclusions

The profile indicates that Washington state has a high percentage of well-educated, certified/licensed community/public health professionals. Many of these professionals have long-term tenure in community/public health - almost a third of them have been involved in this field for over ten years. As expected, the distribution of professional occupations varies by organizational setting. For example, the highest percentage of those providing clinical care are employed by clinics, whereas DOH employs the highest percentage of those providing health planning and communication services, and performing research and management functions. The distribution of occupations in the local health departments falls between that of DOH and the clinics.

The major training needs that emerge are communication skills in the form of interpersonal communication, cross-cultural and cross-age communication, electronic communication, and participatory teaching and training skills. All of these topics were highly rated by professionals in each organizational setting (DOH, LHDs and clinics) and across the largest professional groups (medical clinicians, managers/administrators, non-medical clinicians, environmental/occupational health specialists, and health planners and communication specialists).

A reason that these training needs were rated highly among so many professional groups may be the broad professional responsibilities among these groups. The profile indicates that almost three-quarters of community/public health professionals engage in two or more occupational activities, and half of professionals engage in three or more activities. This means that most professionals are engaging in a number of tasks beyond the bounds of their central professional responsibility. This is illustrated by the finding that although only twenty-two (22) percent of survey respondents categorize themselves as administrators or managers, almost half of respondents report that they have some supervisory/managerial responsibility. Certainly supervisory/managerial tasks require communication skills.

Although survey findings do an excellent job of identifying categories of training needs and preferred modes of training delivery, a more in-depth examination of these topics is needed prior to the design and implementation of training programs. Survey results provide information about preferred categories of training needs, but do not explore what professionals mean by each of those categories. For example, what exactly do professionals mean when they request additional training in electronic communication? Do they want to learn how to send attachments on e-mail, and/or do they want to learn how to use the Internet for research? Focus groups, with community/public health professionals, could be used to answer these questions.

Likewise, the findings of this survey indicate that training delivered by an instructor/trainer is virtually always preferred to mediated training via a computer, audio/video conference or satellite downlink site. The reasons for this preference, however, need to be examined. Perhaps professionals prefer in-person training because of its familiarity, or their lack of comfort with technology (e.g., computers), or because they are more frequently provided with paid time-off for scheduled in-person training. Since some types of training may be most effectively provided in a mediated format (e.g., data analysis), it is important to understand the reasons for professionals' training preferences so that barriers to mediated training can be addressed.

This survey represents the self-identified training needs of community/public health professionals. This means that training needs are most likely based on current professional responsibilities. Given changes within the community/public health system, it would also be helpful to know what legislators, politicians, public policy analysts and community/public health administrators perceive as the areas in which increased proficiency among the community/public health professionals would be beneficial. Incorporation of their perspectives should be included in training plans.

Finally, this survey needs to be implemented among the other organizations that provide community/public health services in Washington. Although DOH, LHDs and clinics are the conventional providers of community/public health services, many other governmental and private organizations also provide these services. For example, the next survey implementation should include other State agencies such as the Department of Social and Health Services and the Department of Ecology; hospitals, health maintenance organizations and health plans; and private non-profit and voluntary agencies such as the American Cancer Society. In addition, it would be useful to survey health professionals in large for profit organizations, such as Boeing, that provide considerable preventive health services to employees and their families. It would also be beneficial to work with the K-12 educational system to coordinate efforts to profile and identify training needs among the many classroom teachers, program specialists and school nurses who provide wellness and prevention services to Washington state's children.

The information, provided by a truly comprehensive profile and training needs assessment, could be used to increase the efficiency and effectiveness of community/public health professionals by identifying areas where training is needed, and supporting training coordination and collaboration among organizations and professional groups.

APPENDIX A
Mean Rating of Each Training Topic by Grouped Occupational Category
(Department of Health)

Training Topics	Occupational Category							
	Medical Clinicians	Non-Medical Clinicians	Manager/ Administrator	Environmental/ Occupational Health	Health Planner/ Communication Specialist	Lab Scientist	Quantitative Researcher	Auditor/ Inspector/ Surveyor
Clinical Skills	**5.2**	4.2	1.7	1.7	1.8	2.8	1.4	2.4
Environmental Health Skills	3.7	2.6	2.1	**5.3**	1.9	4.2	1.6	3.3
Laboratory Skills	2.8	1.8	1.5	3.3	1.6	**6.2**	1.3	2.5
Health Promotion/Disease Prevention	**5.2**	**5.4**	3.0	4.0	3.7	3.9	3.5	2.7
Overview Community/Public Health System	***4.7***	2.2	3.8	3.0	4.2	3.4	3.4	3.0
Finance and Personnel Management/Budgeting	2.8	1.6	***4.9***	2.6	3.6	3.3	2.7	3.3
***Group Facilitation**	***4.7***	4.0	***4.9***	4.1	***4.8***	4.0	3.5	3.8
***Cross-Cultural and Cross-Age Communication**	**5.0**	4.3	4.4	4.1	4.0	3.4	3.4	3.3
***Interpersonal Communication**	4.3	**5.6**	***4.9***	4.3	4.3	***4.5***	4.1	***4.7***
Health and Risk Communication Strategies	3.5	3.4	3.9	4.3	3.7	3.2	3.6	***4.5***
Mediation and Negotiation	3.5	4.1	***4.9***	3.7	4.4	3.6	3.1	4.2
***Participatory Teaching/Training Skills**	***4.9***	***4.6***	4.0	4.4	***4.6***	***4.7***	3.8	3.8
Community/Program Planning	4.3	3.7	4.0	3.6	4.1	3.4	3.5	2.7
Community/Involvement/Mobilization	***4.7***	3.6	3.8	3.0	3.7	3.0	3.1	2.3
Legislative/Policy Advocacy	3.7	3.8	4.3	2.8	4.1	3.0	3.2	3.9
Provision of Technical Assistance	3.6	3.1	4.3	3.4	4.2	4.0	4.1	3.9
***Electronic Communication**	4.2	**5.0**	***4.7***	***4.9***	***4.5***	**5.1**	4.1	4.1
Data Analysis and Utilization	3.5	3.2	4.4	4.1	4.4	**5.1**	**5.5**	3.9
Survey Design and Implementation	3.3	2.8	3.6	3.8	4.3	3.6	***4.9***	3.3
***Quality Improvement and Assurance**	***4.5***	3.2	**5.2**	4.0	***4.7***	**5.1**	3.5	***4.9***
Disease Outbreak Investigation	3.2	2.0	2.2	3.6	2.0	3.8	***4.7***	1.4
Written Communication	4.1	3.7	4.0	***4.5***	***4.5***	**5.1**	***4.8***	***4.8***
	n = 13	n = 9	n = 98	n = 21	n = 49	n = 24	n = 17	n = 19

Rated on a scale of 1-7, with 1 = no benefit, 4 = some benefit, and 7 = great benefit:
mean >= 5.0; 4.5 <= ***mean*** <= 5.0
*highest priority topics

APPENDIX B

Mean Rating of Each Training Topic by Grouped Occupational Category

(Local Health Departments)

Training Topics	Occupational Category							
	Medical Clinicians	Non-Medical Clinicians	Manager/ Administrator	Environmental/ Occupational Health	Health Planner/ Communication Specialist	Lab Scientist	Quantitative Researcher	Auditor/ Inspector/ Surveyor
Clinical Skills	**5.1**	**5.1**	2.4	1.5	2.6	3.6	2.1	2.3
Environmental Health Skills	3.0	3.0	2.4	**6.0**	2.2	***4.7***	2.2	3.3
Laboratory Skills	2.6	2.8	1.8	3.0	1.3	**5.8**	1.9	1.3
Health Promotion/Disease Prevention	**5.3**	**5.0**	4.1	4.0	***4.8***	3.4	4.3	4.3
Overview Community/Public Health System	4.1	3.8	4.3	3.3	4.4	2.5	3.6	4.3
Finance and Personnel Management/Budgeting	2.8	2.9	**5.1**	3.1	3.3	2.8	2.6	2.7
Group Facilitation	***4.6***	***4.5***	***4.8***	3.8	**5.5**	2.7	3.6	3.5
***Cross-Cultural and Cross-Age Communication**	**5.0**	***4.9***	4.3	4.0	**5.7**	3.0	3.4	***4.7***
***Interpersonal Communication**	***4.9***	***4.8***	***4.9***	4.2	**5.3**	4.1	3.7	3.3
Health and Risk Communication Strategies	4.0	3.7	***4.5***	4.2	**5.2**	2.9	3.8	3.5
Mediation and Negotiation	3.5	3.8	***4.7***	4.0	4.3	2.3	2.8	4.3
***Participatory Teaching/Training Skills**	***4.9***	**5.0**	4.2	4.3	**5.6**	3.5	4.3	3.3
Community/Program Planning	***4.5***	4.4	***4.8***	3.7	**5.6**	2.6	4.2	3.0
Community/Involvement/Mobilization	***4.7***	***4.8***	***4.7***	3.7	**5.6**	2.2	4.4	2.3
Legislative/Policy Advocacy	3.9	3.6	***4.7***	3.1	4.4	2.3	3.0	3.0
Provision of Technical Assistance	3.4	3.5	4.3	4.0	4.1	3.4	4.1	4.3
***Electronic Communication**	***4.5***	***4.5***	***4.9***	***4.5***	***4.7***	3.9	***4.5***	4.0
Data Analysis and Utilization	3.8	3.4	***4.9***	4.2	***4.5***	3.9	**5.8**	3.7
Survey Design and Implementation	3.6	3.4	4.3	3.8	***4.8***	3.1	**5.1**	3.3
Quality Improvement and Assurance	4.1	4.2	**5.1**	3.9	***4.6***	***4.5***	***4.7***	4.0
Disease Outbreak Investigation	3.8	3.6	3.2	***4.6***	2.4	3.3	4.1	3.0
Written Communication	4.2	4.2	***4.7***	***4.7***	**5.3**	3.3	***4.6***	3.7
	n= 185	n = 92	n = 129	n = 139	n = 66	n = 13	n = 23	n = 3

Rated on a scale of 1-7, with 1 = no benefit, 4 = some benefit, and 7 = great benefit:
mean >= 5.0; 4.5 <= ***mean*** <= 5.0
*highest priority topics

APPENDIX C
Mean Rating of Each Training Topic by Grouped Occupational Category
(Clinics)

Training Topics	Occupational Category							
	Medical Clinicians	Non-Medical Clinicians	Manager/ Administrator	Environmental/ Occupational Health	Health Planner/ Communication Specialist	Lab Scientist	Quantitative Researcher	Auditor/ Inspector/ Surveyor
***Clinical Skills**	**5.8**	**5.6**	3.6	1.0	3.2	3.0	**6.0**	---
Environmental Health Skills	3.9	3.6	2.5	1.0	3.5	2.1	***4.5***	---
Laboratory Skills	3.6	3.2	2.0	1.0	1.7	**5.3**	4.0	---
***Health Promotion/Disease Prevention**	**5.0**	***4.8***	3.8	4.0	4.0	3.2	**6.0**	---
Overview Community/Public Health System	3.7	3.9	4.2	1.0	***4.7***	3.2	***4.7***	---
Finance and Personnel Management/Budgeting	3.0	2.9	***4.7***	**7.0**	3.0	3.7	**6.0**	---
Group Facilitation	4.0	4.4	**5.0**	**7.0**	**5.2**	4.0	***4.7***	---
***Cross-Cultural and Cross-Age Communication**	**5.0**	**5.3**	***4.6***	**5.0**	**5.7**	4.1	**5.5**	---
***Interpersonal Communication**	4.4	**5.0**	***4.8***	**5.0**	**5.0**	4.0	4.3	---
Health and Risk Communication Strategies	3.4	3.6	3.4	1.0	4.3	3.7	**6.0**	---
Mediation and Negotiation	3.2	3.8	4.4	**7.0**	2.7	2.9	***4.5***	---
Participatory Teaching/Training Skills	4.2	***4.8***	4.4	**7.0**	***4.8***	3.9	**5.5**	---
Community/Program Planning	3.8	4.0	***4.5***	1.0	**5.2**	2.6	**5.5**	---
Community/Involvement/Mobilization	4.0	4.3	4.4	1.0	**5.5**	3.6	**5.5**	---
Legislative/Policy Advocacy	3.3	3.3	3.6	4.0	3.2	3.3	3.5	---
Provision of Technical Assistance	3.1	3.4	3.3	1.0	2.5	4.0	4.0	---
Electronic Communication	3.9	4.2	***4.6***	**7.0**	***4.7***	4.4	**5.0**	---
Data Analysis and Utilization	3.1	3.2	***4.5***	4.0	3.8	***4.6***	***4.7***	---
Survey Design and Implementation	2.7	2.8	3.9	4.0	4.2	3.2	4.3	---
Quality Improvement and Assurance	3.9	4.0	***4.9***	4.0	***4.7***	***4.8***	***4.5***	---
Disease Outbreak Investigation	3.1	3.0	2.4	1.0	2.0	2.9	4.0	---
Written Communication	3.2	3.6	3.8	**7.0**	***4.8***	3.6	3.5	---
	n = 176	n = 135	n = 58	n = 1	n = 6	n = 9	n = 3	n = 0

Rated on a scale of 1-7, with 1 = no benefit, 4 = some benefit, and 7 = great benefit:
mean >= 5.0; 4.5 <= ***mean*** <= 5.0
*highest priority topics