

CHAPTER V

RESULTS

A. Introduction

The three components of analysis in this study were (a) a needs assessment, (b) an instrument design study and (c) an evaluation research on the LWP. Analysis of these three components was done in nine phases. Detailed descriptions of results on the analysis of these phases were presented in separate Research Reports # 1 to # 9 and supported by # 10 Appendices. This Chapter describes the main results of the three study components in nine sections.

B. Need Assessment

1. Identifying Public Health Practices, Services and Competencies Required for Health Systems Development in Thailand

a. What Public Health Practices are important for provincial health system development in Thailand?

The panel adopted the ten priorities formulated in the 9th National Health Development (MOPH, 2001) as the Public Health Practices for Thailand, as described in Table-5.1.

Table-5.1: Identified Public Health Practices for Health Systems Development in Thailand

| No. | Public Health Practices |
|-----|---|
| 1 | <p><i>Health Promotion</i></p> <p>Expedite the process of systematically promoting proactive health by focusing on basic elements for a state of well being coupled with enforcing establishment of measures and mechanisms for systematic health promotion and disease prevention.</p> |
| 2 | <p><i>Health Insurance</i></p> <p>The establishment of a universal health insurance aims to develop quality, standards, systems and administrative approaches of the systems of services, disease control, surveillance and prevention, financing, monitoring and emergency medical services to be more efficient with a unified administration, including health system networks for services assurance.</p> |
| 3 | <p><i>Equity</i></p> <p>Establish security that protects population health from economic and social impacts as well as developing and establishing a safety net for equal access to quality health services, specially the poor and the deprived.</p> |
| 4 | <p><i>Health System Reform</i></p> <p>Reform the infrastructure and administrative mechanism of the health system to arrive at a more unified, effective, transparent and responsive system that includes the promotion of participation and empowerment of all societal parties at all levels for the well being of society's development.</p> |
| 5 | <p><i>Decentralisation</i></p> <p>Emphasise the partnership roles of local administrative organisations, coupled with empowerment of family and civil society sector at all levels to promote full participation in formulating policy, resource allocation and management, and social mobilisation for local health system development and public sector investigation.</p> |
| 6 | <p><i>Capacity building</i></p> <p>Enhance the capacity of people, family, community and civil society on health, through the promotion of community participation in all aspects of health. The provision of health information as to improve healthy behaviour and self-reliance. This includes the strengthening of local administrative authorities to be able to manage for health promotion and disease control with concrete action plans. Supported by systems and organisations for controlling, tracking and screening the quality health and health-related information.</p> |

Table-5.1: Identified Public Health Practices for Health Systems Development in Thailand (Cont.)

| No. | Public Health Practices |
|-----|---|
| 7 | <p><i>Develop Primary Care</i></p> <p>Development of primary care facilities located in both urban and rural areas systematically inter-linked with higher service systems. Enhance all primary health centres to provide accepted quality and standards in health promotion, disease control and prevention, rehabilitation and first aid. Develop efficient network systems covering, primary, secondary and tertiary, care including emergency medical services and complementing these with universal health insurance coverage. Finally develop a mechanism for expansion control, improvement and distribution of health facilities at all levels on the basis of needs and benefits of the population.</p> |
| 8 | <p><i>Service Quality</i></p> <p>Co-ordinate the establishment of a national organisation for hospital accreditation of health facilities. The establishment of criteria and quality standards to assure development of health facilities at all levels. Promote health facilities, both public and private, to utilise quality herbal medicines.</p> |
| 9 | <p><i>Research & Development</i></p> <p>Promotion of intellectual capacity of the health system with a focus on Thai traditional medicine and alternative medicine in terms of integration of Thai and international wisdom. Establish constructive collaboration for determining research policy and framework as well as health research administration in response to health system needs.</p> |
| 10 | <p><i>Health Industry</i></p> <p>Promote and lessen barriers of health services delivery for foreigners. Promote MOPH agencies, communities, households, business sectors to be able to produce standard health products and technologies for domestic use to lessen import and promote export.</p> |

Source: 9th National Health Development Plan Thailand Summary Booklet p. 15.

b. What set of Public Health Services would be appropriate for Thailand?

The panel also adopted the set of ten Public Health Services used by the CLAPHW (1998) and added one Service, considered to be of importance for the Thai context namely: Planning and Management. The Services were discussed in detail to arrive at a description for each as shown in Table-5.2.

Table-5.2: Identified Public Health Services for Health Systems Development in Thailand

| No. | Public Health Services |
|-----|---|
| 1 | <p><i>Monitor</i></p> <p>Includes the use of quantitative and qualitative methods in developing information and monitoring systems and procedures, for populations health status, prevention measure outcomes (law compliance, vaccination, etc.), health system development, as well as community-oriented research.</p> |
| 2 | <p><i>Diagnose & Investigate</i></p> <p>Includes the analysis of quantitative and qualitative data related to population health status, health hazards, preventive measures and the development of evidence-based insights from research.</p> |
| 3 | <p><i>Disseminate Information</i></p> <p>Includes dissemination of information, public relations and health promotion activities, including advocacy.</p> |
| 4 | <p><i>Policy Development</i></p> <p>Refers to the development of appropriate policies for (1) protecting population health, (2) address the public health system external environment, and (3) the public health system's internal environment.</p> |
| 5 | <p><i>Partnerships</i></p> <p>Refers to multidisciplinary, inter-sector (public, IO/NGO, private, academic) strategies, including community integration and participation.</p> |

Table-5.2: Identified Public Health Services for Health Systems Development in Thailand (Cont.)

| No. | Public Health Services |
|-----|---|
| 6 | <p><i>Enforce Laws</i></p> <p>Refers to activities required to enforce policies, laws, and regulations that protect population health, such as collaboration with other public agencies, use of media, development of inspection indicators and management and monitoring of enforcement processes.</p> |
| 7 | <p><i>Assure Human Resources</i></p> <p>Refers to staff development and continues professional education activities such as supervision, performance appraisal, training, and higher education.</p> |
| 8 | <p><i>Access to Services</i></p> <p>Refers to coverage and utilisation of health promotion, preventive, curative, and rehabilitative health services, including health insurance schemes, and extension of services.</p> |
| 9 | <p><i>Evaluation</i></p> <p>Refers to evaluation of all public health services in terms of effectiveness, efficiency, quality, and access.</p> |
| 10 | <p><i>Research</i></p> <p>Refers to applied (epidemiological and social) research on population health, public health policy and health systems (organisation & technical development).</p> |
| 11 | <p><i>Planning & Management</i></p> <p>Includes strategic and operational planning, budgeting and financial management, supervision, and monitoring implementation.</p> |

c. What Public Health Competencies would be appropriate for Thailand?

In the discussion on Competencies, a semantic confusion between 'Competencies', 'Skills' and 'Attributes' arose. To address the confusion, the following definitions were used:

Table-5.3: Defining Public Health Competencies, Skills and Attributes

Public Health Competencies are:

Sets of skills desirable for:

The delivery of essential public health services.

Intended levels of mastery and, therefore, learning objectives for professionals within each competency, will differ depending upon their backgrounds & professional roles.

(CLAPHW,1998)

Skills in Public Health are:

... The ability to do conceptual, analytical and or practical activities well...

Attributes in Public Health are:... Qualities and values regarded as typical and related to public health professionals...

The panel reached consensus to select the Universal Competency Domains developed by the CLAPHW (1998). The set of eight Public Health Competency Domains, each containing specific Skills, are presented in Table-5.4 to 5.11 below.

Table-5.4: Basic Public Health Science Skills Domain

1. Basic Public Health Science Skills

1.1 Identify responsibilities within public health:

Identify responsibilities within the context of the priority public health practices and core functions

1.2 Use basic research design and methods.

Use basic qualitative and quantitative research designs and methods used in public health.

1.3 Apply basic public health sciences:

Apply basic public health sciences including behavioural and social sciences, bio-statistics, Epidemiology, environmental public health, and prevention of chronic, infectious diseases, And injuries.

1.4 Assess health status of populations:

Assess and define the health status of populations, determinants of health and illness, factors

Contributing to health promotion and disease prevention, and factors influencing the use of Public health services.

Table-5.4: Basic Public Health Science Skills Domain (Cont.)

1.5 Apply critical thinking:

Apply critical thinking

1.6 Identify scientific evidence:

Identify and access current relevant scientific evidence.

1.7 Identify limitations of research:

Identify limitations of research and the importance of observations and interrelationships.

1.8 Apply risk assessment:

Apply risk assessment and risk communication skills.

1.9 Use information packages:

Know how to use public health information packages i.e. Epi-Info, SPSS, to track, analyse, and present findings on population health.

1.10 Design a surveillance system:

Design a surveillance system.

1.11 Operate a surveillance system:

Operate a surveillance system.

1.12 Use computer applications:

Use computer/information technology applications.

1.13 Apply ethical conduct:

Apply ethical conduct in practice, research, data collection, and storage.

Table-5.5: Analytic Skills Domain

2. Analytic Skills

2.1 Define a problem:

Define a problem.

2.2 Determine appropriate use and limitations of data:

Determine appropriate use and limitations of data.

2.3 Select and define variables:

Select and define variables relevant to defined public health problems.

2.4 Use research designs and methods:

Use basic qualitative and quantitative research designs and methods applied in public health.

2.5 Partner with communities:

Partner with communities to attach meaning to collected data.

2.6 Use appropriate data collection:

Use appropriate data collection process and information technology applications.

2.7 Make relevant inferences from data:

Make relevant inferences from data.

2.8 Identify relevant data sources:

Identify relevant and appropriate data and information sources.

2.9 Apply ethical principles:

Apply ethical principles to the collection, maintenance, use and dissemination of data and Information.

2.10 Evaluate data:

Evaluate the integrity and comparability of data and identifies gaps in data sources.

2.11 Illuminate issues from data:

Illuminate ethical, political, scientific, economic and overall public health issues from data.

2.12 Obtain and interpret community risk and benefits:

Obtain and interpret information about risks and benefits to the community.

Table-5.6: Policy Development Skills Domain

| 3. Policy Development Skills |
|--|
| <p><i>3.1 Collect, summarise and interpret information:</i> Collect, summarise and interpret information relevant to an issue.</p> <p><i>3.2 State policy options:</i> State policy options and write clear and concise policy statements.</p> <p><i>3.3 Articulate implications of policy options:</i> Articulate health, fiscal, administrative, legal, social and political implications of policy Options.</p> <p><i>3.4 State expected outcome of policy options:</i> State the feasibility and expected outcome of policy options.</p> <p><i>3.5 Decide on the appropriate course of action:</i> Decide on the appropriate course of action.</p> <p><i>3.6 Use current techniques in analysis and planning:</i> Utilise current techniques in decision analysis and health planning.</p> <p><i>3.7 Identify policies for specific programs:</i> Identify, interpret, and implement laws, regulations, and policies related to specific programs.</p> |

Table-5.7: Social Skills Domain

| 4. Social Skills |
|--|
| <p><i>4.1 Interact sensitively, effectively and professionally:</i> Apply appropriate methods for interacting sensitivity, effectively, and professionally with persons from diverse cultural, socio-economic, educational, racial, ethnic, and professional backgrounds, and persons of all ages and lifestyle preferences.</p> <p><i>4.2 Identify the role of cultural factors in service delivery:</i> Identify the role of cultural, social, and behavioural factors in determining the delivery of public Health services.</p> <p><i>4.3 Adapt problem solving to fit cultural differences:</i> Develop and adapt approaches to problems that take into account cultural differences.</p> |

Table-5.8: Strategic Management Skills Domain

| 5. Strategic Management Skills |
|--|
| <p><i>5.1 Prepare and implement emergency plans:</i> Prepare and implement emergency response plans.</p> |
| <p><i>5.2 Develop plans:</i> Develop plans to implement policies, including goals, outcome and process objectives and implementation steps.</p> |
| <p><i>5.3 Translate policy into plans:</i> Translate policy into organisational plans, structures and programs.</p> |
| <p><i>5.4 Develop monitoring and evaluation:</i> Develop mechanisms to monitor and evaluate programs for effectiveness, efficiency, and quality.</p> |
| <p><i>5.5 Conduct cost-effectiveness-cost-utility analysis:</i> Conduct cost-effectiveness, cost-benefit, and cost-utility analyses.</p> |
| <p><i>5.6 Apply theory of organisation:</i> Apply theory of organisation and relate it to professional practice.</p> |
| <p><i>5.7 Contribute to organisational performance standards:</i> Contribute to the development, implementation, and monitoring of organisational performance standards.</p> |
| <p><i>5.8 Promote team learning and organisation learning:</i> Promote team learning and organisation learning.</p> |
| <p><i>5.9 Create values and shared vision:</i> Create key values and shared vision and uses those principles to guide action.</p> |
| <p><i>5.10 Identify issues through strategic planning:</i> Identify internal and external issues that may impact delivery of essential public health practices through strategic planning.</p> |
| <p><i>5.11 Use appropriate methods that effect change:</i> Use appropriate methods that effect change.</p> |
| <p><i>5.12 Ensure participation of key stakeholders:</i> Facilitate collaboration with internal and external groups to ensure participation of key stakeholders.</p> |
| <p><i>5.13 Create a culture of ethical standards:</i> Create a culture of ethical standards within organisations and communities.</p> |

Table-5.9: Communication Skills Domain

| 6. Communication Skills |
|---|
| <p><i>6.1 Communicate effectively:</i> Communicate effectively both in writing and orally (unless a handicap).</p> <p><i>6.2 Solicit input from individuals and organisations:</i> Solicit input from individuals and organisations.</p> <p><i>6.3 Advocate for public health:</i> Advocate for public health programs and resources.</p> <p><i>6.4 Lead and participate in groups:</i> Lead and participate in-groups to address specific issues.</p> <p><i>6.5 Use appropriate channels to disseminate information:</i> Use the media, advanced technologies, and community networks to communicate information.</p> <p><i>6.6 Listen to others in an unbiased manner:</i> Listen to others in an unbiased manner, respect points of view of others, and promote the expression of diverse opinions and perspectives.</p> <p><i>6.7 Make accurate and effective presentations:</i> Make accurate and effective presentations to professional and lay audiences.</p> |

Table-5.10: Partnership Skills Domain

| 7. Partnership Skills |
|---|
| <p><i>7.1 Maintain linkages with key stakeholders:</i> Maintain linkages with key stakeholders.</p> <p><i>7.2 Collaborate with community to promote health:</i> Collaborate with community partners to promote health of the population.</p> <p><i>7.3 Mobilise organisations that operate within the community:</i> Mobilise effectively public, private, and NGO organisations operate within the community.</p> <p><i>7.4 Use management skills to build partnerships:</i> Use leadership, team building, negotiation and conflict resolution skills to build partnerships.</p> <p><i>7.5 Identify community resources:</i> Identify community assets and available resources.</p> <p><i>7.6: Conduct community assessment:</i> Develop, implement, and evaluate a community public health assessment.</p> |

Table-5.11: Operational Management Skills Domain

8. Operational Management Skills

8.1 Develop and present a budget:

Develop and present a budget.

8.2: Manage programs without budget constraints:

Manage programs without budget constraints.

8.3 Apply budget processes:

Apply budget processes

8.4 Determine budget priorities:

Develop strategies for determining budget priorities.

8.5 Monitor program performance:

Monitor program performance.

8.6 Develop proposals for funding:

Develop proposals for funding from external resources.

8.7 Apply basic human relation skills:

Apply basic human relation skills to the management of organisations, personnel, and resolution of conflicts.

8.8 Manage information systems for decision-making:

Manage information systems for collection, retrieval, and use of data for decision-making.

8.9 Apply ethical conduct:

Apply ethical conduct in practice, and program management.

Modified from the Council on Linkages between Academia and Public Health Workforce (1998)

Table-5.12 shows the final outcome of the Structured Group Discussions on health system functions and the related bodies responsible for these functions at the provincial level, the Public Health Practices for Thailand, the Public Health Services and the adopted Public Health Competencies.

Table-5.12: Revised Framework on Public Health Functions, Practices, Services and Competencies in Thailand¹

| Public Health Functions | Public Health Practices | Public Health Services | Public Health Competency Domains |
|---|---|--|--|
| Development of Information (PHO) Surveillance HIS – HMI Research Evaluation | Health Promotion Health Insurance Equity Health System Reform Decentralisation Capacity Building | Monitor Diagnose & Investigate Disseminate Information Policy Development Partnerships Enforce Laws | Basic Public Health Science Skills Analytic Skills Policy Development Skills Social Skills Strategic Management Skills Communication Skills |
| Development of Responses (AHB & PHO) Policy Development Strategic Planning Budgeting & Resources Organisation Development | Develop Primary Care Service Quality Research & Development Health Industry | Assure Human Resources Access to Services Evaluation Research Planning & Management | Partnership Skills Operational Management Skills |
| Development of Support (AHB & PHO) Advocacy Networking Resource Mobilisation | | | |
| Management of Services (Service Sector) Operational Planning Implementation Monitoring & Evaluation | | | |
| Arrangement of Functions (AHB, PAO, MAO & TAO) Co-ordination Regulation Control | | | |

¹ Each column presents a summary list without indicating the horizontal connections. Legend: PH (Public health), PHO (Provincial Health Office), HIS (Health Information System), HMI (Health Management Information), AHB (Area Health Board), Service sector (promotion, prevention, cure/care), PAO (Provincial Administrative Organisation), MAO (Municipality Administrative Organisation), TAO (Thambon Administrative Organisation).

2. Stakeholders' Perspectives on the Current Level of Performance of Public Health Services, on the Level of Involvement in Services by Type of Staff and on Required Levels of Mastery in Public Health Competencies by Type of Staff in Provincial Thailand.

The overall response rate 228/657 (34.6%) was divided into the following Constituencies: Public Health Professionals' 119/306 (38.9%), Administrators' 74/174 (42.3%), Academics 25/141 (17.7%) and Representatives of the MOPH 10/36 (27.8%).

a. The Perceptions of Key Constituencies on what Public Health Services are Currently Considered to be a Weakness, at a Satisfactory Level or Strength.

Considering all Public Health Services together, using ANOVA, there was no statistically significant difference between the 4 Constituencies at $p = 0.01$.

By Chi-square test, there was a statistical significant difference for one Service only, namely "Evaluation" ($p = 0.008$), more of the Professionals considered that 'Evaluation' was a Weakness.

As shown in Table-5.13 most of the Services were considered to be Satisfactory in Performance by each of the Constituencies. The exception was 'Research', where all Constituencies believed it was a Weakness.

Because an ordinal scale of 3 levels (Weakness, Satisfactory and Strength), it was necessary to deal with a possible response bias. The following arbitrary criteria were used: (1) for Strength the Proportion had to be $\geq 33.3\%$, (2) for Satisfactory the Proportion had to be $\geq 66.6\%$ and (3) for Weakness the Proportion had to be $\geq 33.3\%$.

1) Strengths in Performance

None of the Constituencies rated any of the eleven Public Health Services as Strength ($\geq 33.3\%$).

2) Satisfactory in Performance

All Constituencies considered 'Access to Services' and 'Planning and Management' as Satisfactory ($\geq 66.6\%$).

Professionals, Administrators and MOPH representatives believed that 'Disseminate Information' and 'Assure Human Resources' was Satisfactory.

Professionals, Administrators and Academics considered 'Policy Development' as Satisfactory.

3) Weaknesses in Performance

All Constituencies believed that the Current Performance Level is a Weakness for 'Research' ($\geq 33.3\%$).

Professionals, Academics and MOPH representatives believed that the following were a Weakness: 'Monitor'; 'Diagnose and Investigate'; 'Enforce Laws'; and 'Evaluation'. Professionals and Academics believed that 'Partnerships' was a Weakness. The Academics only believed that 'Policy Development' was a Weakness.

Table-5.13: Frequencies and Proportions on the Current Performance of each Public Health Service as Considered by Constituencies

| SN | Public Health Services | Group | Miss. N | Strength | | Satisfactory | | Weakness | | X ² p value |
|----|-------------------------|----------------|------------|----------|------|--------------|------|----------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 1 | Monitor | Professionals | 1 | 3 | 2.5 | 75 | 63.6 | 40 | 33.9 | 0.219 |
| | | Administrators | 2 | 4 | 5.6 | 51 | 70.8 | 17 | 23.6 | |
| | | Academics | 3 | 0 | 0.0 | 13 | 59.1 | 9 | 40.9 | |
| | | MOPH | 1 | 0 | 0.0 | 4 | 44.4 | 5 | 55.6 | |
| 2 | Diagnose & Investigate | Professionals | 2 | 4 | 3.4 | 66 | 56.4 | 47 | 40.2 | 0.090 |
| | | Administrators | 2 | 2 | 2.8 | 52 | 72.2 | 18 | 25.0 | |
| | | Academics | 3 | 0 | 0.0 | 13 | 59.1 | 9 | 40.9 | |
| | | MOPH | 0 | 0 | 0.0 | 4 | 40.0 | 6 | 60.0 | |
| 3 | Disseminate Information | Professionals | 3 | 10 | 8.6 | 86 | 74.1 | 20 | 17.2 | 0.198 |
| | | Administrators | 2 | 12 | 16.7 | 46 | 63.9 | 14 | 19.4 | |
| | | Academics | 1 | 4 | 16.7 | 13 | 54.2 | 7 | 29.2 | |
| | | MOPH | 0 | 0 | 0.0 | 9 | 90.0 | 1 | 10.0 | |
| 4 | Policy Development | Professionals | 4 | 6 | 5.2 | 77 | 67.0 | 32 | 27.8 | 0.050 |
| | | Administrators | 4 | 6 | 8.6 | 55 | 78.6 | 9 | 12.9 | |
| | | Academics | 1 | 1 | 4.2 | 16 | 66.7 | 7 | 29.2 | |
| | | MOPH | 1 | 1 | 11.1 | 4 | 44.4 | 4 | 44.4 | |
| 5 | Partnerships | Professionals | 1 | 6 | 5.1 | 59 | 50.0 | 53 | 44.9 | 0.060 |
| | | Administrators | 6 | 3 | 4.4 | 46 | 67.6 | 19 | 27.9 | |
| | | Academics | 3 | 1 | 4.5 | 11 | 50.0 | 10 | 45.5 | |
| | | MOPH | 0 | 2 | 20.0 | 6 | 60.0 | 2 | 20.0 | |
| 6 | Planning and Management | Professionals | 2 | 10 | 8.5 | 77 | 65.8 | 30 | 25.6 | 0.102 |
| | | Administrators | 5 | 9 | 13.0 | 51 | 73.9 | 9 | 13.0 | |
| | | Academics | 5 | 1 | 5.0 | 14 | 70.0 | 5 | 25.0 | |
| | | MOPH | 1 | 1 | 11.1 | 7 | 77.8 | 1 | 11.1 | |

Table-5.13: Frequencies and Proportions on the Current Performance of each Public Health Service as Considered by Constituencies (Cont.)

| | | | | | | | | | | |
|----|------------------------|----------------|---|----|------|----|------|----|------|--------|
| 7 | Enforce Laws | Professionals | 1 | 5 | 4.2 | 65 | 55.1 | 48 | 40.7 | 0.262 |
| | | Administrators | 3 | 5 | 7.0 | 45 | 63.4 | 21 | 29.6 | |
| | | Academics | 2 | 0 | 0.0 | 9 | 39.1 | 14 | 60.9 | |
| | | MOPH | 0 | 1 | 10.0 | 4 | 40.0 | 5 | 50.0 | |
| 8 | Assure Human Resources | Professionals | 1 | 12 | 10.2 | 76 | 64.4 | 30 | 25.4 | 0.698 |
| | | Administrators | 4 | 10 | 14.3 | 43 | 61.4 | 17 | 24.3 | |
| | | Academics | 3 | 2 | 9.1 | 12 | 54.5 | 8 | 36.4 | |
| | | MOPH | 0 | 0 | 0.0 | 7 | 70.0 | 3 | 30.0 | |
| 9 | Access to Services | Professionals | 2 | 17 | 14.5 | 71 | 60.7 | 29 | 24.8 | 0.593 |
| | | Administrators | 4 | 10 | 14.3 | 47 | 67.1 | 13 | 18.6 | |
| | | Academics | 2 | 1 | 4.3 | 17 | 73.9 | 5 | 21.7 | |
| | | MOPH | 0 | 0 | 0.0 | 8 | 80.0 | 2 | 20.0 | |
| 10 | Evaluation | Professionals | 4 | 1 | 0.9 | 55 | 47.8 | 59 | 51.3 | 0.008* |
| | | Administrators | 4 | 2 | 2.9 | 48 | 68.6 | 20 | 28.6 | |
| | | Academics | 2 | 0 | 0.0 | 12 | 52.2 | 11 | 47.8 | |
| | | MOPH | 0 | 0 | 0.0 | 4 | 40.0 | 6 | 60.0 | |
| 11 | Research | Professionals | 4 | 2 | 1.7 | 32 | 27.8 | 81 | 70.4 | 0.094 |
| | | Administrators | 5 | 1 | 1.4 | 30 | 43.5 | 38 | 55.1 | |
| | | Academics | 2 | 1 | 4.3 | 5 | 21.7 | 17 | 73.9 | |
| | | MOPH | 0 | 0 | 0.0 | 2 | 20.0 | 8 | 80.0 | |

Legend: p value < 0.01

4) Summary

There was agreement on the Level of Current Performance between Professionals, Academics and MOPH representatives for 7 of the 11 Services. Also between Professionals and Administrators there was agreement on 7 of the 11 Services on Current Performance. Further for 9 of the 11 Services there was agreement between Professionals and Academics.

Administrators believed more frequent (10/11) than other Constituencies that the Level of Service Performance was Satisfactory. While Academics less frequently (3/11) perceived the Level of Service Performance as Satisfactory.

Table-5.14: Distribution of Perceptions on the Levels of Current Performance of Public Health Services in Thailand

| Public Health Services | Professionals | Administrators | Academia | MOPH |
|-------------------------------|----------------------|-----------------------|-----------------|-------------|
| Monitor | W | S | W | W |
| Diagnose & Investigate | W | S | W | W |
| Disseminate Information | S | S | W | S |
| Policy Development | S | S | S | W |
| Partnerships | W | S | W | S |
| Planning & Management | S | S | S | S |
| Enforce Laws | W | S/W | W | W |
| Assure Human Resources | S | S | W | S |
| Access to Services | S | S | S | S |
| Evaluation | W | S | W | W |
| Research | W | W | W | W |

Legend:

W = Weakness & S = Satisfactory;

Blank cells represent proportions that did not meet the criteria for Strength, Satisfactory or Weakness.

b. The Perceptions of Key Constituencies on what is the Level of Involvement in Public Health Services by Public Health Staff; where the Level of Involvement is defined as (a) Not Involved, (b) Participates and (c) Responsible.

Perceptions on the Level of Involvement are presented for the three (3) Levels of Public Health Staff. The criterion used in analysis of this section was a proportion of $\geq 50\%$.

Considering all Public Health Services, using ANOVA, there was an overall statistically significant difference between Constituencies for Front-line Staff ($p = 0.003$). The difference occurred between Professionals and Academics. There was no statistically significant difference for Mid-level Management Staff ($p = 0.315$) and for Top-level Management Staff ($p = 0.389$).

1) Front-line Staff

By Chi-square test there was a statistically significant difference, between Professionals and Administrators, for the Public Health Service 'Policy Development' ($p = 0.009$) and between Academics and all other Constituencies for 'Enforce Laws ($p = 0.009$).

There was considerable variation between the responses of Constituencies for:

Non-involvement of Front-line Staff in 'Policy Development': Professionals and MOPH representatives viewed that Front-line Staff was Not Involved in 'Policy Development'. Administrators and Academics' viewed on the other hand that Front-line Staff Participates in 'Policy Development'.

All Constituencies considered Front-line Staff to Participate in 'Enforce Laws', except Academics, the majority of them considered Front-line Staff to be Responsible.

Not Involved

For the Service 'Policy Development' Professionals (50.9%) and MOPH representatives (80.0%) perceived Non-involvement of Front-line Staff.

Participates

Compared to Professionals:

Administrators perceived no Participation for Front-line Staff in (1) 'Monitor' (49.3%), (2) 'Disseminate Information' (49.3%), (3) 'Access to Services' (43.5%) and (4) 'Research' (42.4%).

Academics perceived no Participation for Front-line Staff in (1) 'Monitor' (33.3%), (2) 'Diagnose and Investigate' (33.3%), (3) 'Disseminate Information' (22.7%) and (4) 'Planning and Management' (45.0%), (5) 'Enforcing Laws' (40.9%) and (6) 'Access to Services' (22.7%).

MOPH representatives perceived no Participation for Front-line Staff in (1) 'Disseminate Information' (40.0%); 'Policy Development' (20.0%) and (2) 'Access to Services' (30.0%).

Responsible

Compared to Professionals:

Administrators perceived Responsibility of Front-line Staff for 'Monitor' (50.7%) and 'Access to Services' (53.6%).

Academics perceived for all eleven Public Health Services Responsibility for Front-line Staff, for (1) 'Monitor' (66.7%), (2) 'Diagnose and Investigate' (66.7%) (3) 'Disseminate Information' (68.2%), and (4) 'Access to Service' (77.3%).

MOPH representatives perceived Responsibility for Front-line Staff in (1) 'Disseminate Information' (60.0%) and (2) 'Access to Services' (70.0%).

Table-5.15: Frequencies and Proportions on the Involvement of Front-line Staff in Public Health Services as Considered by Constituencies

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|-------------------------|----------------|------------|-------------|------|-------------|------|--------------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 1 | Monitor | Professionals | 0 | 40 | 33.6 | 73 | 61.3 | 6 | 5.0 | 0.019 |
| | | Administrators | 3 | 36 | 50.7 | 35 | 49.3 | 0 | 0.0 | |
| | | Academics | 3 | 14 | 66.7 | 7 | 33.3 | 0 | 0.0 | |
| | | MOPH | 0 | 1 | 10.0 | 9 | 90.0 | 0 | 0.0 | |
| 2 | Diagnose & Investigate | Professionals | 0 | 42 | 35.3 | 62 | 52.1 | 15 | 12.6 | 0.167 |
| | | Administrators | 4 | 28 | 40.0 | 39 | 55.7 | 3 | 4.3 | |
| | | Academics | 4 | 14 | 66.7 | 7 | 33.3 | 0 | 0.0 | |
| | | MOPH | 0 | 0 | 0.0 | 9 | 90.0 | 1 | 10.0 | |
| 3 | Disseminate Information | Professionals | 3 | 45 | 38.8 | 68 | 58.6 | 3 | 2.6 | 0.463 |
| | | Administrators | 5 | 33 | 47.8 | 34 | 49.3 | 2 | 2.9 | |
| | | Academics | 3 | 15 | 68.2 | 5 | 22.7 | 2 | 9.1 | |
| | | MOPH | 0 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | |
| 4 | Policy Development | Professionals | 7 | 4 | 3.6 | 51 | 45.5 | 57 | 50.9 | 0.009 |
| | | Administrators | 6 | 9 | 13.2 | 37 | 54.4 | 22 | 32.4 | |
| | | Academics | 5 | 0 | 0.0 | 13 | 65.0 | 7 | 35.0 | |
| | | MOPH | 0 | 0 | 0.0 | 2 | 20.0 | 8 | 80.0 | |
| 5 | Partnerships | Professionals | 2 | 25 | 21.4 | 71 | 60.7 | 21 | 17.9 | 0.140 |
| | | Administrators | 7 | 15 | 22.4 | 47 | 70.1 | 5 | 7.5 | |
| | | Academics | 3 | 9 | 40.9 | 11 | 50.0 | 2 | 9.1 | |
| | | MOPH | 0 | 4 | 40.0 | 5 | 50.0 | 1 | 3.4 | |
| 6 | Planning and Management | Professionals | 4 | 18 | 15.7 | 75 | 65.2 | 22 | 19.1 | 0.085 |
| | | Administrators | 7 | 17 | 25.4 | 44 | 65.7 | 6 | 9.0 | |
| | | Academics | 5 | 8 | 40.0 | 9 | 45.0 | 3 | 15.0 | |
| | | MOPH | 0 | 2 | 20.0 | 7 | 70.0 | 1 | 10.0 | |

Table-5.15: Frequencies and Proportions on the Involvement of Front-line Staff in Public Health Services as Considered by Constituencies
(Cont.)

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|------------------------|----------------|------------|-------------|------|-------------|------|--------------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 7 | Enforce Laws | Professionals | 3 | 17 | 14.7 | 74 | 63.8 | 25 | 21.6 | 0.009 |
| | | Administrators | 4 | 21 | 30.0 | 43 | 61.4 | 6 | 8.6 | |
| | | Academics | 3 | 10 | 45.5 | 9 | 40.9 | 3 | 13.6 | |
| | | MOPH | 0 | 2 | 20.0 | 7 | 70.0 | 1 | 10.0 | |
| 8 | Assure Human Resources | Professionals | 2 | 13 | 11.1 | 76 | 65.0 | 28 | 23.9 | 0.064 |
| | | Administrators | 8 | 15 | 22.7 | 33 | 50.0 | 18 | 27.3 | |
| | | Academics | 4 | 5 | 23.8 | 11 | 52.4 | 5 | 23.8 | |
| | | MOPH | 0 | 0 | 0.0 | 7 | 70.0 | 3 | 30.0 | |
| 9 | Access to Services | Professionals | 0 | 56 | 47.1 | 61 | 51.3 | 2 | 1.7 | 0.540 |
| | | Administrators | 5 | 37 | 53.6 | 30 | 43.5 | 2 | 2.9 | |
| | | Academics | 3 | 17 | 77.3 | 5 | 22.7 | 0 | 0.0 | |
| | | MOPH | 0 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | |
| 10 | Evaluation | Professionals | 1 | 20 | 16.9 | 76 | 64.4 | 22 | 18.6 | 0.240 |
| | | Administrators | 10 | 15 | 23.4 | 33 | 51.6 | 16 | 25.0 | |
| | | Academics | 4 | 8 | 38.1 | 12 | 57.1 | 1 | 4.8 | |
| | | MOPH | 0 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | |
| 11 | Research | Professionals | 1 | 17 | 14.4 | 70 | 59.3 | 31 | 26.3 | 0.088 |
| | | Administrators | 8 | 13 | 19.7 | 28 | 42.4 | 25 | 37.9 | |
| | | Academics | 3 | 7 | 31.8 | 11 | 50.0 | 4 | 18.2 | |
| | | MOPH | 0 | 1 | 10.0 | 8 | 80.0 | 1 | 10.0 | |

Legend: * p value <0.01

2) Mid-level Management Staff

Using Chi-square, there was no statistical difference on the Level of Involvement in Services for Mid-level Management Staff.

Not Involved

Compared to Professionals:

Administrators, Academics and MOPH representatives' perceptions on the degree of Not being Involved for Mid-level Management Staff were in line with those of Professionals.

Participates

Compared to Professionals:

Administrators perceived Participation of Mid-level Management Staff in all Services, except (1) 'Planning and Management' (49.3%), (2) 'Enforce Laws' (47.1%), (3) 'Assure Human Resources' (48.5%) and (4) 'Evaluation' (35.8%).

Academics perceived Participation for Mid-level Management Staff only in (1) 'Diagnose' (50.0%), 'Disseminate Information' (55.0%), (2) 'Policy Development' (66.7%), (3) 'Partnerships' (54.5%) and 'Access to services' (50.0%).

MOPH representatives perceived Participation for Mid-level Management Staff only in (1) 'Policy Development' (90.0%), (2) 'Enforce Laws' (70.0%), 'Assure Human Resources' (50.0%) and 'Access to Services' (50.0%).

Responsible

Compared to Professionals:

Administrators perceived Responsibility for Mid-level Management Staff only in 'Enforce Laws' (50.0%), 'Assure Human Resources' (50.0%) and 'Evaluation' (62.7%).

Academics perceived Responsibility for Mid-level Management in (1) 'Planning and Management' (60.0%), (2) 'Enforce Laws' (54.5%), (3) 'Assure Human Resources' (76.2%), (4) 'Evaluation' (66.7%) and (5) 'Research' (54.5%).

MOPH representatives perceived Responsibility for Mid-level Management Staff in all Services except (1) 'Policy Development' (10%) and (2) 'Enforce Laws' (30.0%).

Table-5.16: Frequencies and Proportions on Involvement of Mid-level Management Staff in Public Health Services as Considered by Constituencies

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|-------------------------|----------------|------------|-------------|------|-------------|------|--------------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 1 | Monitor | Professionals | 3 | 51 | 44.0 | 57 | 49.1 | 8 | 6.9 | 0.460 |
| | | Administrators | 5 | 24 | 34.8 | 40 | 58.0 | 5 | 7.2 | |
| | | Academics | 6 | 9 | 47.4 | 7 | 36.8 | 3 | 15.8 | |
| | | MOPH | 0 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | |
| 2 | Diagnose & Investigate | Professionals | 3 | 50 | 43.1 | 55 | 47.4 | 11 | 9.5 | 0.427 |
| | | Administrators | 6 | 24 | 35.3 | 39 | 57.4 | 5 | 7.4 | |
| | | Academics | 7 | 8 | 44.4 | 9 | 50.0 | 1 | 5.6 | |
| | | MOPH | 0 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | |
| 3 | Disseminate Information | Professionals | 4 | 59 | 51.3 | 51 | 44.3 | 5 | 4.3 | 0.042 |
| | | Administrators | 6 | 22 | 32.4 | 41 | 60.3 | 5 | 7.4 | |
| | | Academics | 5 | 7 | 35.0 | 11 | 55.0 | 2 | 10.0 | |
| | | MOPH | 0 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | |
| 4 | Policy Development | Professionals | 5 | 31 | 27.2 | 73 | 64.0 | 10 | 8.8 | 0.092 |
| | | Administrators | 8 | 24 | 36.4 | 41 | 62.1 | 1 | 1.5 | |
| | | Academics | 4 | 6 | 28.6 | 14 | 66.7 | 1 | 4.8 | |
| | | MOPH | 0 | 1 | 10.0 | 9 | 90.0 | 0 | 0.0 | |
| 5 | Partnerships | Professionals | 3 | 39 | 33.6 | 68 | 58.6 | 9 | 7.8 | 0.195 |
| | | Administrators | 7 | 25 | 37.3 | 41 | 61.2 | 1 | 1.5 | |
| | | Academics | 3 | 9 | 40.9 | 12 | 54.5 | 1 | 4.5 | |
| | | MOPH | 1 | 5 | 55.6 | 4 | 44.4 | 0 | 0.0 | |
| 6 | Planning and Management | Professionals | 5 | 51 | 44.7 | 58 | 50.9 | 5 | 4.4 | 0.835 |
| | | Administrators | 5 | 33 | 47.8 | 34 | 49.3 | 2 | 2.9 | |
| | | Academics | 5 | 12 | 60.0 | 7 | 35.0 | 1 | 5.0 | |
| | | MOPH | 0 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | |

Table-5.16: Frequencies and Proportions on Involvement of Mid-level Management Staff in Public Health Services as Considered by Constituencies (Cont.)

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|------------------------|----------------|---------|-------------|------|-------------|------|--------------|------|------------------------|
| 7 | Enforce Laws | Professionals | 6 | 38 | 33.6 | 66 | 58.4 | 9 | 8.0 | 0.060 |
| | | Administrators | 6 | 34 | 50.0 | 32 | 47.1 | 2 | 2.9 | |
| | | Academics | 3 | 12 | 54.5 | 10 | 45.5 | 0 | 0.0 | |
| | | MOPH | 0 | 3 | 30.0 | 7 | 70.0 | 0 | 0.0 | |
| 8 | Assure Human Resources | Professionals | 3 | 50 | 43.1 | 57 | 49.1 | 9 | 7.8 | 0.168 |
| | | Administrators | 6 | 34 | 50.0 | 33 | 48.5 | 1 | 1.5 | |
| | | Academics | 4 | 16 | 76.2 | 4 | 19.0 | 1 | 4.8 | |
| | | MOPH | 0 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | |
| 9 | Access to Services | Professionals | 4 | 37 | 32.2 | 67 | 58.3 | 11 | 9.6 | 0.411 |
| | | Administrators | 5 | 28 | 40.6 | 37 | 53.6 | 4 | 5.8 | |
| | | Academics | 5 | 8 | 40.0 | 10 | 50.0 | 2 | 10.0 | |
| | | MOPH | 0 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | |
| 10 | Evaluation | Professionals | 2 | 65 | 55.6 | 47 | 40.2 | 5 | 4.3 | 0.451 |
| | | Administrators | 7 | 42 | 62.7 | 24 | 35.8 | 1 | 1.5 | |
| | | Academics | 4 | 14 | 66.7 | 6 | 28.6 | 1 | 4.8 | |
| | | MOPH | 0 | 6 | 60.0 | 4 | 40.0 | 0 | 1.1 | |
| 11 | Research | Professionals | 3 | 51 | 44.0 | 53 | 45.7 | 12 | 10.3 | 0.256 |
| | | Administrators | 7 | 22 | 32.8 | 39 | 58.2 | 6 | 9.0 | |
| | | Academics | 3 | 12 | 54.5 | 8 | 36.4 | 2 | 9.1 | |
| | | MOPH | 0 | 8 | 80.0 | 1 | 10.0 | 1 | 10.0 | |

Legend: p value <0.01

3) Top-level Management Staff

Using Chi-square, there was no statistical difference on the Level of Involvement in Services for Top-level Management Staff.

Not Involved

Compared to Professionals:

Administrators, Academics and MOPH representatives' perceptions on the degree of Not Involved for Top-level Management Staff were in line with those of Professionals.

Participates

Compared to Professionals:

Administrators, Academics and MOPH representatives perceived no Participation of Top-level Management Staff in each of the Public Health Services.

Responsible

Compared to Professionals:

Administrators perceived Responsibility for Top-level Management Staff in all Services as well.

Academics perceived Responsibility for Top-level Management Staff in (1) 'Policy Development' (100%), (2) 'Partnerships' (56.5%), (3) 'Planning and Management' (76.2%), (4) 'Enforce Laws' (73.9%) (5) 'Assure Human Resources' (95.5%), (6) 'Evaluation' (50.1%) and (7) 'Research' (73.9%).

MOPH representatives perceived Responsibility for Top-level Management Staff in all Services as well.

Table-5.17: Frequencies and Proportions on Involvement of Top Management Staff in Public Health Services as Considered by Constituencies

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|-------------------------|----------------|---------|-------------|-------|-------------|------|--------------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 1 | Monitor | Professionals | 6 | 61 | 54.0 | 23 | 20.4 | 29 | 25.7 | 0.613 |
| | | Administrators | 6 | 35 | 51.5 | 18 | 26.5 | 15 | 22.1 | |
| | | Academics | 5 | 7 | 35.0 | 4 | 20.0 | 9 | 45.0 | |
| | | MOPH | 0 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | |
| 2 | Diagnose & Investigate | Professionals | 5 | 68 | 59.6 | 25 | 21.9 | 21 | 18.4 | 0.395 |
| | | Administrators | 8 | 33 | 50.0 | 16 | 24.2 | 17 | 25.8 | |
| | | Academics | 5 | 6 | 30.0 | 8 | 40.0 | 6 | 30.0 | |
| | | MOPH | 1 | 7 | 77.8 | 2 | 22.2 | 0 | 0.0 | |
| 3 | Disseminate Information | Professionals | 4 | 67 | 58.3 | 26 | 22.6 | 22 | 19.1 | 0.152 |
| | | Administrators | 8 | 35 | 53.0 | 23 | 34.8 | 8 | 12.1 | |
| | | Academics | 4 | 8 | 38.1 | 7 | 33.3 | 6 | 28.6 | |
| | | MOPH | 0 | 8 | 80.0 | 1 | 10.0 | 1 | 10.0 | |
| 4 | Policy Development | Professionals | 3 | 93 | 80.2 | 17 | 14.7 | 6 | 5.2 | 0.149 |
| | | Administrators | 6 | 59 | 86.8 | 9 | 13.2 | 0 | 0.0 | |
| | | Academics | 3 | 22 | 100.0 | 0 | 0.0 | 0 | 0.0 | |
| | | MOPH | 0 | 10 | 100.0 | 0 | 0.0 | 0 | 0.0 | |
| 5 | Partnerships | Professionals | 2 | 77 | 65.8 | 25 | 21.4 | 15 | 12.8 | 0.085 |
| | | Administrators | 8 | 36 | 54.5 | 24 | 36.4 | 6 | 9.1 | |
| | | Academics | 2 | 9 | 56.5 | 9 | 39.1 | 1 | 4.3 | |
| | | MOPH | 1 | 1 | 88.9 | 1 | 11.1 | 0 | 0.0 | |
| 6 | Planning and Management | Professionals | 4 | 76 | 66.1 | 29 | 25.2 | 10 | 8.7 | 0.505 |
| | | Administrators | 8 | 39 | 59.1 | 22 | 33.3 | 5 | 7.6 | |
| | | Academics | 4 | 16 | 76.2 | 5 | 23.8 | 0 | 0.0 | |
| | | MOPH | 0 | 10 | 100.0 | 0 | 0.0 | 0 | 0.0 | |

Table-5.17: Frequencies and Proportions on Involvement of Top Management Staff in Public Health Services as Considered by Constituencies (Cont.)

| SN | Public Health Services | Group | Miss. N | Responsible | | Participate | | Not Involved | | X ² p value |
|----|------------------------|----------------|------------|-------------|------|-------------|------|--------------|------|------------------------|
| | | | | N | % | N | % | N | % | |
| 7 | Enforce Laws | Professionals | 4 | 81 | 70.4 | 23 | 20.0 | 11 | 9.6 | 0.529 |
| | | Administrators | 8 | 42 | 63.6 | 18 | 27.3 | 6 | 9.1 | |
| | | Academics | 2 | 17 | 73.9 | 4 | 17.4 | 2 | 8.7 | |
| | | MOPH | 0 | 9 | 90.0 | 0 | 0.0 | 1 | 10.0 | |
| 8 | Assure Human Resources | Professionals | 5 | 86 | 75.4 | 18 | 15.8 | 10 | 8.8 | 0.277 |
| | | Administrators | 6 | 49 | 72.1 | 16 | 23.5 | 3 | 4.4 | |
| | | Academics | 3 | 21 | 95.5 | 1 | 4.5 | 0 | 0.0 | |
| | | MOPH | 0 | 9 | 90.0 | 0 | 0.0 | 1 | 10.0 | |
| 9 | Access to Services | Professionals | 4 | 66 | 57.4 | 27 | 23.5 | 22 | 19.1 | 0.387 |
| | | Administrators | 8 | 36 | 54.5 | 21 | 31.8 | 9 | 13.6 | |
| | | Academics | 5 | 7 | 35.0 | 7 | 35.0 | 6 | 30.0 | |
| | | MOPH | 0 | 5 | 50.0 | 2 | 20.0 | 3 | 30.0 | |
| 10 | Evaluation | Professionals | 3 | 74 | 63.8 | 28 | 24.1 | 14 | 12.1 | 0.089 |
| | | Administrators | 9 | 42 | 64.6 | 21 | 32.3 | 2 | 3.1 | |
| | | Academics | 3 | 13 | 59.1 | 8 | 36.4 | 1 | 5.4 | |
| | | MOPH | 0 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | |
| 11 | Research | Professionals | 5 | 64 | 56.1 | 30 | 26.3 | 20 | 17.5 | 0.400 |
| | | Administrators | 7 | 39 | 58.2 | 21 | 31.3 | 7 | 10.4 | |
| | | Academics | 2 | 17 | 73.9 | 6 | 26.1 | 0 | 0.0 | |
| | | MOPH | 0 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | |

Legend: p value < 0.01

4) Summary

Table-5.18 presents a visual summary of Services by Current Performance and Responsibility Levels based on the distribution as perceived by Professionals only.

Professionals perceived 'Disseminate Information' Satisfactory and did not consider Involvement of Front-line Staff in 'Policy Development'.

Although two Levels of Staff (Mid-level and Top-level Management Staff) were considered to be Responsible for 'Evaluation' this Service is still considered as a Weakness.

Table-5.18: Current Performance of Public Health Services by Type of Staff and by Level of Involvement as Perceived by Professionals

| Performance | Public Health Services | Front-line | Mid-level | Top-level |
|---------------------|--------------------------|------------|-----------|-----------|
| Strength | None | | | |
| Satisfactory | Disseminate Information | P | R | R |
| | Policy Development | NI | P | R |
| | (Assure Human Resources) | P | P | R |
| | (Access to Services) | P | P | R |
| | Planning & Management | P | P | R |
| Weakness | (Monitor) | P | P | R |
| | Diagnose & Investigate | P | P | R |
| | Partnerships | P | P | R |
| | Enforce Laws | P | P | R |
| | Evaluation | P | R | R |
| | Research | P | P | R |

Legend: R = Responsible, P = Participation, NI = Not Involved, (Services) = these Services that did not meet analysis criteria were classified by the proportion that was closest to any of the 3 levels of Current Performance.

**c. Perceptions of the key Constituencies on the Required Level of Mastery
in Public Health Skills²**

1) Introduction

The respondents were asked to express their view on the Level of Mastery required for each of the 70 individual Skills, in 8 Competency Domains. These Skills are described, in detail, in Section A.1, Tables 5.4-5.11 and summarised, by Competency Domain, in Table-5.19.

Table-5.19: Competency Domains and Related Skills

| Competency Domain | Number of Related Skills |
|----------------------------------|---------------------------------|
| 1. Basic Public Health Skills | 13 |
| 2. Analytic Skills | 12 |
| 3. Policy Development Skills | 7 |
| 4. Social Skills | 3 |
| 5. Strategic Management Skills | 13 |
| 6. Communication Skills | 7 |
| 7. Partnership Skills | 6 |
| 8. Operational Management Skills | 9 |

The questions to the respondents for each Skill at each Level of Public Health Staff were as follows: (1) Is this Skill a Core Skill? (2) If this is a Core Skill, what Level of Mastery is required?

Some respondents did not respond to these questions for some of the Skills and others responded that it was 'Not a Core Skill'. These were added together to produce a single category. If this category represented more than 10% of the total responses, it was considered to be 'Not a Core Skill'.

There was agreement by all four Constituencies on a rather large number of Skills as being 'a Core Skill' and on only one as being 'Not a Core Skill' (Table-5.20).

² As defined by the Council on Linkages between Academia and Public Health Workforce (1998) adopted for use in this study by the Nominal Group Discussion.

Table-5.20: Public Health Core Skills and Not Core Skills for Front-line, Mid-level and Top-level Management Staff by Number of Constituencies

| Public Health Skills | # Constituencies | Number of Public Health Skills | | |
|----------------------|------------------|--------------------------------|-----------|-----------|
| | | Front-line | Mid-level | Top-level |
| Core Skills | 4 | 34 | 55 | 31 |
| Not Core Skills | 1 | 20 | 13 | 34 |
| | 2 | 9 | 2 | 4 |
| | 3 | 6 | 0 | 1 |
| | 4 | 1 | 0 | 0 |
| All Skills | | 70 | 70 | 70 |

There were also differences among Constituencies for Skills considered to be a “Not a Core Skills and “Core Skill” and this for each of the three Levels of Staff. These differences have been summarised in Table-5.21 and are shown in detail in subsequent Tables. There were minor disagreements between all the Constituencies. In the analysis, which follow:

If the disagreement was between 3 or 4 Constituencies agreeing that it was a Core Skill, the disagreement was, again, very often between the Administrators and the others. So in the analysis, these two responses were combined and shown as ‘Revised Core Skills’.

If the disagreement was between 3 or 4 Constituencies agreeing that a Skill was Not a Core Skill, the disagreement was most often between Administrators and others. So in the analysis, these two responses were combined and shown as ‘Revised Not Core Skills’.

Table-5.21: Revised Public Health Core and Not Core Skills for Front-line, Mid-level and Top-level Management Staff by Number of Constituencies

| Public Health Skills | # Constituencies | Constituency | Number of Public Health Skills | | |
|-------------------------|------------------|----------------|--------------------------------|-----------|-----------|
| | | | Front-line | Mid-level | Top-level |
| Revised Core Skills | 3-4 | | 41 | 65 | 65 |
| Core Skills | 4 | | 34 | 55 | 31 |
| Not Core Skills | 1 | Administrators | 7 | 10 | 34 |
| | 1 | Others | 13 | 3 | 0 |
| | 2 | | 9 | 2 | 4 |
| | 3 | Others | 5 | 0 | 1 |
| | 3 | Prof./Ac/MOPH | 1 | 0 | 0 |
| | 4 | | 1 | 0 | 0 |
| Revised Not Core Skills | 3-4 | | 2 | 0 | 0 |
| All Skills | | | 70 | 70 | 70 |

The rationale for this decision was, as noted in Appendix-IV, only half of the Administrators were Administrators of municipalities and only municipalities have a health division under their administration. By Chi-square test there was a statistically significant difference for various Skills between municipality vs. provincial and sub-district respondents.

Subsequent Tables 5.27, 5.32 and 5.37 show the suggested Skills and required Levels of Skill Mastery for Front-line, Mid-level Management and Top-level Management Staff by presenting Frequencies, Proportions, Chi-square p values, Weighted Mean and the Ranking of each Skill within the total set of 70 Skills.

2) Level of Mastery in Public Health Skills Required for Front-line Staff

(a) Not Core Skills

The only two Skills considered not being a Core Skill for Front-line Staff were:

| Competency Domain | Skill Number | Description of Skill |
|------------------------|--------------|--|
| 1. Basic Public Health | 10 | 'Design a surveillance system' |
| 3. Policy Development | 3 | 'Articulate implications of policy options'. |

(b) Core Skills

Based upon Table-5.22, 41 of the remaining 68 Skills were considered to be a Core Skill by 3 or 4 of the Constituencies and 27 were considered to be Not a Core Skill by 1-3 of the Constituencies. This latter group required further study; which is the subject of Section A.6. The discussion, which follows, deals with those Skills that are considered to be Core Skills.

In reviewing the Levels of Mastery required for each of the Core Skills, for most Skills and for most Constituencies the respondents expected Front-line Staff to be Knowledgeable. There were differences by Constituency as to whether the Level of Mastery required should be at the level of Proficiency (Table-5.22), Knowledgeable (Table-5.23) or for relatively few, only, at the level of Awareness. The criterion used in identifying the Level of Mastery per Skill and for each Constituency was a Frequency of $\geq 50\%$.

Of the 41 Skills considered to be a Core Skill, the Level of Mastery expected by Professionals was Proficiency for only one Skill (Partnership Skill Domain, No. 2 'Collaborate with community to promote health'). Administrators do not expect Proficiency for any of the 41 Core Skills, while the expectations of Academics and MOPH representatives are much higher with 12 and 14 Skills respectively. Table-5.22 shows those Skills for which two or more Constituencies expect Proficiency as the required Level of Mastery.

Table-5.22: Skills Considered being Core Skills for Front-line Staff, Requiring Proficiency by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|---|---------------|----------------|-----------|------|
| 2. | Analytical Skills | | | | |
| 2.5 | Partner with communities. | 41.9 | 39.7 | 70.8 | 80.0 |
| 4 | Social Skills | | | | |
| 4.1 | Interact sensitivity, effectively and professionally. | 36.4 | 38.6 | 75.0 | 90.0 |
| 6. | Communication Skills | | | | |
| 6.1 | Communicate effectively. | 31.9 | 32.4 | 79.2 | 50.0 |
| 6.2 | Solicit input from individuals and organisations. | 21.9 | 27.1 | 58.3 | 50.0 |
| 6.6 | Listen to others in an unbiased manner. | 22.6 | 23.2 | 56.5 | 50.0 |
| 6.7 | Make accurate and effective presentations. | 20.7 | 24.6 | 65.2 | 50.0 |
| 7. | Partnership Skills | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 38.3 | 27.1 | 79.2 | 70.0 |
| 7.2 | Collaborate with community to promote health. | 50.0 | 42.6 | 87.5 | 100 |

Of the 41 Skills considered to be a Core Skill, the Level of Mastery expected by Professionals was Knowledgeable for 14 Skills. As presented in Table-5.27 the expectations of Administrators are much higher and considered Knowledgeable for 38 of the 41 Core Skills. While the expectations on being Knowledgeable for Academics were for 13 Skills and for MOPH representatives' 21 Skills. Table-5.23 shows those Skills, in total 33, for which two or more Constituencies expected Knowledgeable as the required Level of Mastery.

Table-5.23: Skills Considered being Core Skills for Front-line Staff, Requiring being Knowledgeable by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|--|---------------|----------------|-----------|------|
| 1. | Basic Public Health Skills | | | | |
| 1.1 | Identify responsibilities within public health. | 60.2 | 66.2 | 52.2 | 70.0 |
| 1.3 | Apply basic public health sciences. | 53.0 | 67.1 | 52.2 | 40.0 |
| 1.4 | Assess and define the health status of populations. | 48.3 | 58.6 | 60.9 | 70.0 |
| 1.6 | Identify and access current scientific evidence. | 43.5 | 51.4 | 56.5 | 55.6 |
| 1.11 | Operate a surveillance system. | 44.6 | 51.5 | 43.5 | 60.0 |
| 1.12 | Use computer applications. | 59.5 | 59.7 | 43.5 | 60.0 |
| 2. | Analytical Skills | | | | |
| 2.1 | Define a problem. | 51.3 | 63.8 | 50.0 | 30.0 |
| 2.2 | Determine appropriate use and limitations of data. | 47.3 | 58.8 | 47.8 | 55.6 |
| 2.7 | Make relevant inferences from data. | 51.3 | 58.8 | 47.8 | 40.0 |
| 2.8 | Identify relevant data and information sources. | 44.7 | 58.0 | 58.3 | 20.0 |
| 2.10 | Evaluate data. | 48.3 | 53.6 | 69.6 | 40.0 |
| 2.12 | Obtain and interpret community risks and benefits. | 48.2 | 62.3 | 50.0 | 33.3 |
| 3. | Policy Development Skills | | | | |
| 3.5 | Decide on the appropriate course of action. | 47.7 | 59.7 | 73.9 | 66.7 |
| 4 | Social Skills | | | | |
| 4.2 | Identify the role of cultural factors in service delivery. | 50.0 | 59.1 | 45.8 | 44.4 |
| 4.3 | Adapt problem solving to fit cultural differences. | 46.0 | 54.5 | 33.3 | 50.0 |
| 5. | Strategic Management Skill | | | | |
| 5.1 | Prepare and implement emergency responses. | 44.5 | 58.0 | 52.2 | 40.0 |
| 5.7 | Contribute to organisational performance standards. | 42.1 | 56.3 | 50.0 | 44.4 |
| 5.9 | Create key values and shared vision. | 46.0 | 63.2 | 43.5 | 60.0 |
| 5.10 | Identify issues through strategic planning. | 43.1 | 60.3 | 43.5 | 50.0 |
| 5.12 | Ensure participation of key stakeholders. | 54.9 | 60.6 | 37.5 | 30.0 |
| 5.13 | Create a culture of ethical standards. | 50.9 | 64.7 | 50.0 | 50.0 |
| 6. | Communication Skills | | | | |
| 6.1 | Communicate effectively. | 56.0 | 57.7 | 16.7 | 50.0 |
| 6.2 | Solicit input from individuals and organisations. | 57.9 | 60.0 | 37.5 | 50.0 |
| 6.5 | Use appropriate channels to disseminate information. | 54.4 | 49.3 | 50.0 | 20.0 |
| 6.6 | Listen to others in an unbiased manner. | 56.5 | 62.3 | 34.8 | 50.0 |
| 6.7 | Make accurate and effective presentations. | 57.8 | 60.9 | 21.7 | 50.0 |
| 7. | Partnership Skills | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 50.4 | 61.4 | 12.5 | 30.0 |
| 7.3 | Mobilise organisations operate within the community. | 49.1 | 55.9 | 30.4 | 60.0 |
| 7.5 | Identify community resources. | 45.2 | 52.9 | 37.5 | 60.0 |
| 7.6 | Conduct a community assessment. | 45.6 | 57.1 | 30.4 | 60.0 |
| 8. | Operational Management Skills | | | | |
| 8.1 | Develop and present a budget. | 47.7 | 63.2 | 45.8 | 50.0 |
| 8.2 | Manage programs without budget constraints. | 41.4 | 63.6 | 47.8 | 50.0 |
| 8.7 | Apply basic human relation skills. | 41.9 | 66.7 | 41.7 | 50.0 |

Of the 41 Skills considered to be a Core Skill, the Level of Mastery expected by Professionals was Awareness for 3 Skills in the Strategic Management Competency Domain, namely Skill No. 7, No. 10 and No. 11, as shown in Table-5.27. In contrast, Administrators, Academics and MOPH representatives did not consider Awareness for any of the 41 Core Skills. There was not a single Skill for which two or more Constituencies expected Awareness as the required Level of Mastery.

Tables-5.24 to 5.26 summarise the numbers of Skills, per Competency Domain, for each Level of Mastery by Constituency as follows:

Table-5.24: The Number of Skills for Front-line Staff for which the Level of Mastery should be at the Level of Proficiency by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|---------------------|----------------------|-----------------------|-----------------|------------------|
| Basic Public Health Skills | 13 | 0 | 0 | 0 | 1 |
| Analytical Skills | 12 | 0 | 0 | 1 | 2 |
| Policy Development Skills | 7 | 0 | 0 | 0 | 0 |
| Social Skills | 3 | 0 | 0 | 2 | 1 |
| Strategic Management Skills | 13 | 0 | 0 | 0 | 1 |
| Communication Skills | 7 | 0 | 0 | 4 | 5 |
| Partnership Skills | 6 | 1 | 0 | 5 | 2 |
| Operational Management Skills | 9 | 0 | 0 | 0 | 2 |

Table-5.25: The Number of Skills for Front-line Staff for which the Level of Mastery should be at the Level of Knowledgeable by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|---------------------|----------------------|-----------------------|-----------------|------------------|
| Basic Public Health Skills | 13 | 3 | 7 | 4 | 5 |
| Analytical Skills | 12 | 2 | 7 | 4 | 1 |
| Policy Development Skills | 7 | 0 | 1 | 1 | 1 |
| Social Skills | 3 | 1 | 2 | 0 | 1 |
| Strategic Management Skills | 13 | 2 | 7 | 3 | 3 |
| Communication Skills | 7 | 5 | 4 | 1 | 4 |
| Partnership Skills | 6 | 1 | 4 | 0 | 3 |
| Operational Management Skills | 9 | 0 | 6 | 0 | 3 |

Table-5.26: The Number of Skills for Front-line Staff for which the Level of Mastery should be at the Level of Awareness by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|---------------------|----------------------|-----------------------|-----------------|------------------|
| Basic Public Health Skills | 13 | 0 | 0 | 0 | 0 |
| Analytical Skills | 12 | 0 | 0 | 0 | 0 |
| Policy Development Skills | 7 | 0 | 0 | 0 | 0 |
| Social Skills | 3 | 0 | 0 | 0 | 0 |
| Strategic Management Skills | 13 | 3 | 0 | 0 | 0 |
| Communication Skills | 7 | 0 | 0 | 0 | 0 |
| Partnership Skills | 6 | 0 | 0 | 0 | 0 |
| Operational Management Skills | 9 | 0 | 0 | 0 | 0 |

(c) Comparisons between Professionals and Administrators

The responses of the two largest Constituencies, Professionals (119) and Administrators (74), were compared using the Chi-square test and the results are shown in Table-5.28. The differences between the other two Constituencies could not be examined because of the relatively small number of respondents in each group: Academics (25) and MOPH-representatives (10).

Very few of these comparisons were statistically significant at $p < 0.01$. These included:

| Competency Domain | Skill # | Skill Description | p value |
|-------------------|---------|---|---------|
| 2. Analytical | 11 | Illuminate public health issues from data. | 0.007* |
| 5. Strategic | 2 | Develop plans | 0.001* |
| Management | 3 | Translate policy into plans. | 0.001* |
| | 4 | Develop monitoring and evaluation. | 0.001* |
| | 5 | Conduct cost-effectiveness-benefit-utility analyses | 0.006* |
| | 6 | Apply theory of organisation. | 0.003* |
| | 11 | Use appropriate methods that effect change. | 0.002* |
| 8. Operational | 4 | Determine budget priorities. | 0.008* |
| Management | 7 | Apply basic human relation skills. | 0.001* |
| | 8 | Manage information systems for decision-making. | 0.007* |

(d) Weighted Means and Ranking

To summarise the data further, a Weighted-Mean and Ranking were determined for each of the 70 Skills and shown in Table-5.27; in each, all of the responses have been utilised from each of the four Constituencies. The Weighted Mean for each of the 70 Skills was determined using following schema:

$$\begin{aligned} \bar{X} = & \sum (n \text{ Missing } X \text{ 100/ } n \text{ Constituency } X \text{ 0}) \\ & + (n \text{ Not Core } X \text{ 100/ } n \text{ Constituency } X \text{ -3}) \\ & + (n \text{ Proficiency } X \text{ 100/ } n \text{ Constituency } X \text{ 3}) \\ & + (n \text{ Knowledgeable } X \text{ 100/ } n \text{ Constituency } X \text{ 2}) \\ & + (n \text{ Awareness } X \text{ 100/ } n \text{ Constituency } X \text{ 1}) \\ & \text{Sum of above divided by 400} \end{aligned}$$

The maximum possible Weighted Mean was 3.00 and the minimum possible Weighted Mean was 0.00. The range of Weighted Mean-scores was, then, classified as follows: Proficiency (2.34-3.00), Knowledgeable (1.67-2.33), Awareness (1.00-1.66) and Not a Core Skill (< 1.00).

Based upon the Weighted-Mean, the 70 Skills were, then, ranked from high to low. As shown below, the congruence between these scores and the previous determination as whether a Skill was Core vs. Not-Core and for Core Skills the Level of Mastery was reasonable.

| Skills considered being | # | Range of weighted-mean | Range of Ranking |
|-------------------------|----|------------------------|------------------|
| Not Core Skills | 2 | 0.97-0.87 | 69-70 |
| Suggested Core Skills | 27 | 1.83-1.01 | 26-68 |
| Core Skills | 41 | 2.45-1.34 | 1-63 |

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|------|------|---------------|----------------|----|-----------|----|----------------------|-------|---------------|------|
| | | | Missing | Not Core | Total | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | N | N | % | | % | N | % | N | % | N | | | % |
| A | Core Public Health Skills | | | | | | | | | | | | | | | |
| 7.2 | Collaborate with community to promote health. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 58 | 50.0 | 45 | 38.8 | 13 | 11.2 | 0.626 | 2.45 | 1/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 29 | 42.6 | 30 | 44.1 | 9 | 13.2 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 21 | 87.5 | 2 | 8.3 | 1 | 4.2 | | | |
| | | MOPH | 1 | 0 | 1 | 10.0 | 100 | 9 | 100 | 0 | 0.0 | 0 | 0.0 | | | |
| 4.1 | Interact sensitivity, effectively, and professionally. | Professionals | 1 | 0 | 1 | 0.8 | 99.2 | 43 | 36.4 | 51 | 43.2 | 24 | 20.3 | 0.578 | 2.42 | 2/70 |
| | | Administrators | 2 | 2 | 4 | 5.4 | 94.6 | 27 | 38.6 | 33 | 47.1 | 10 | 14.3 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 18 | 75.0 | 5 | 20.8 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | |
| 2.5 | Partner with communities. | Professionals | 2 | 0 | 2 | 1.7 | 98.3 | 49 | 41.9 | 45 | 38.5 | 23 | 19.7 | 0.156 | 2.41 | 3/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 27 | 39.7 | 34 | 50.0 | 7 | 10.3 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 17 | 70.8 | 7 | 29.2 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 7.1 | Maintain linkages with key stakeholders. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 44 | 38.3 | 58 | 50.4 | 13 | 11.3 | 0.280 | 2.36 | 4/70 |
| | | Administrators | 3 | 1 | 4 | 5.5 | 94.6 | 19 | 27.1 | 43 | 61.4 | 8 | 11.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 19 | 79.2 | 3 | 12.5 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value< 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|-----|----------|---|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 6.2 | Solicit input from individuals and organisations. | Professionals | 5 | 4.2 | 0 | 5 | 95.8 | 25 | 21.9 | 66 | 57.9 | 23 | 20.2 | 0.394 | 2.21 | 5/70 |
| | | Administrators | 3 | 5.5 | 1 | 4 | 94.6 | 19 | 27.1 | 42 | 60.0 | 9 | 12.9 | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 96.0 | 14 | 58.3 | 9 | 37.5 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 6.5 | Use appropriate channels to disseminate information. | Professionals | 5 | 4.2 | 0 | 5 | 95.8 | 26 | 22.8 | 62 | 54.4 | 26 | 22.8 | 0.519 | 2.15 | 6/70 |
| | | Administrators | 4 | 6.8 | 1 | 5 | 93.2 | 21 | 30.4 | 34 | 49.3 | 14 | 20.3 | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 96.0 | 9 | 37.5 | 12 | 50.0 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |
| 6.7 | Make accurate and effective presentations. | Professionals | 3 | 2.5 | 0 | 3 | 97.5 | 24 | 20.7 | 67 | 57.8 | 25 | 21.6 | 0.469 | 2.14 | 7/70 |
| | | Administrators | 4 | 6.8 | 1 | 5 | 93.2 | 17 | 24.6 | 42 | 60.9 | 10 | 14.5 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 92.0 | 15 | 65.2 | 5 | 21.7 | 3 | 13.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 10.0 | 5 | 10.0 | 0 | 0.0 | | | |
| 6.6 | Listen to others in an unbiased manner. | Professionals | 3 | 3.3 | 1 | 4 | 96.6 | 26 | 22.6 | 65 | 56.5 | 24 | 20.9 | 0.548 | 2.12 | 8/70 |
| | | Administrators | 4 | 6.8 | 1 | 5 | 93.2 | 16 | 23.2 | 43 | 62.3 | 10 | 14.5 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 92.0 | 13 | 56.5 | 8 | 34.8 | 2 | 8.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | | | |
|---|---|----------------|------------------|-----|----------|---|------|---------------|----|-------------|----|----------------|----|-----------|---------------|----------------------|-------|------|
| | | | Missing | | Not Core | | | Total | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | N | % | | | |
| 2.8 | Identify relevant data sources. | Professionals | 4 | 4.2 | 1 | 5 | 4.2 | 95.8 | 31 | 27.2 | 51 | 44.7 | 32 | 28.1 | 0.160 | 2.11 | 9/70 | |
| | | Administrators | 4 | 6.8 | 1 | 5 | 6.8 | 93.2 | 17 | 24.6 | 40 | 58.0 | 12 | 17.4 | | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 4.0 | 96.0 | 7 | 29.2 | 14 | 58.3 | 3 | 12.5 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | | |
| 7.5 | Identify community resources. | Professionals | 1 | 3.3 | 3 | 4 | 3.3 | 96.6 | 30 | 26.1 | 52 | 45.2 | 33 | 28.7 | 0.493 | 2.11 | 9/70 | |
| | | Administrators | 2 | 5.4 | 2 | 4 | 5.4 | 94.6 | 18 | 25.7 | 37 | 52.9 | 15 | 21.4 | | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 4.0 | 96.0 | 13 | 54.2 | 9 | 37.5 | 2 | 8.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | | |
| 7.3 | Mobilise organisations that operate within the community. | Professionals | 3 | 5.9 | 4 | 7 | 5.9 | 94.1 | 36 | 32.1 | 55 | 49.1 | 21 | 18.8 | 0.464 | 2.07 | 11/70 | |
| | | Administrators | 4 | 8.1 | 2 | 6 | 8.1 | 91.9 | 16 | 23.5 | 38 | 55.9 | 14 | 20.6 | | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 8.0 | 92.0 | 14 | 60.9 | 7 | 30.4 | 2 | 8.7 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | | |
| 8.9 | Apply ethical conduct. | Professionals | 2 | 2.5 | 1 | 3 | 2.5 | 97.5 | 23 | 19.8 | 51 | 44.0 | 42 | 36.2 | 0.056 | 2.05 | 12/70 | |
| | | Administrators | 2 | 4.1 | 1 | 3 | 4.1 | 95.9 | 13 | 18.3 | 43 | 60.6 | 15 | 21.1 | | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 8 | 34.8 | 4 | 17.4 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | Weighted Mean | | |
|---|--|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 4.3 | Adapt problem solving to fit cultural differences. | Professionals | 2 | 4 | 6 | 5.1 | 95.0 | 26 | 23.0 | 52 | 46.0 | 35 | 31.0 | 0.442 | 2.03 | 13/70 |
| | | Administrators | 6 | 2 | 8 | 10.8 | 89.2 | 15 | 22.7 | 36 | 54.5 | 15 | 22.7 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 14 | 58.3 | 8 | 33.3 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 7.6 | Conduct a community assessment. | Professionals | 1 | 4 | 5 | 4.2 | 95.8 | 31 | 27.2 | 52 | 45.6 | 31 | 27.2 | 0.216 | 2.03 | 13/70 |
| | | Administrators | 3 | 1 | 4 | 5.5 | 94.6 | 18 | 25.7 | 40 | 57.1 | 12 | 17.1 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 15 | 65.2 | 7 | 30.4 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 1.12 | Use computer applications. | Professionals | 5 | 3 | 8 | 6.7 | 93.3 | 26 | 23.4 | 66 | 59.5 | 19 | 17.1 | 0.548 | 2.00 | 15/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 12 | 17.9 | 40 | 59.7 | 15 | 22.4 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 10 | 43.5 | 10 | 43.5 | 3 | 13.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 2 | 20.0 | 2 | 20.0 | | | |
| 8.8 | Manage information systems for decision-making. | Professionals | 2 | 0 | 2 | 1.7 | 98.3 | 16 | 13.7 | 59 | 50.4 | 42 | 35.9 | 0.007* | 2.00 | 15/70 |
| | | Administrators | 2 | 1 | 3 | 4.1 | 95.9 | 19 | 26.8 | 40 | 56.3 | 12 | 16.9 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 7 | 30.4 | 13 | 56.5 | 3 | 13.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value< 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|---|----------------|------------------|---|----------|-----|------|---------------|----------------|----|-----------|----|----------------------|--------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 2.1 | Define a problem. | Professionals | 2 | 4 | 6 | 5.1 | 95.0 | 20 | 17.7 | 58 | 51.3 | 35 | 31.0 | 0.215 | 1.98 | 17/70 |
| | | Administrators | 4 | 1 | 5 | 6.8 | 93.2 | 11 | 15.9 | 44 | 63.8 | 14 | 20.3 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 9 | 37.5 | 12 | 50.0 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 3 | 30.0 | 2 | 20.0 | | | |
| 5.12 | Ensure participation of key stakeholders. | Professionals | 3 | 3 | 6 | 5.0 | 95.0 | 17 | 15.0 | 62 | 54.9 | 34 | 30.1 | 0.533 | 1.98 | 17/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 12 | 16.9 | 43 | 60.6 | 16 | 22.5 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 7 | 29.2 | 9 | 37.5 | 8 | 33.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | |
| 6.1 | Communicate effectively. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 37 | 31.9 | 65 | 56.0 | 14 | 12.1 | 0.897 | 1.98 | 17/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 23 | 32.4 | 41 | 57.7 | 7 | 9.9 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 19 | 79.2 | 4 | 16.7 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 8.7 | Apply basic human relation skills. | Professionals | 2 | 0 | 2 | 1.7 | 98.3 | 18 | 15.4 | 49 | 41.9 | 50 | 42.7 | 0.001* | 1.97 | 20/70 |
| | | Administrators | 2 | 0 | 2 | 2.7 | 97.3 | 11 | 15.3 | 48 | 66.7 | 13 | 18.1 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 10 | 41.7 | 10 | 41.7 | 4 | 16.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 5 | 50.0 | 2 | 20.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | Weighted Mean | | | |
|---|---|----------------|------------------|------|----------|------|------|---------------|----|---------------|----|-----------|----|----------------------|-------|------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledgeable | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 2.9 | Apply ethical principles. | Professionals | 2 | 3.4 | 2 | 5.4 | 4 | 96.6 | 21 | 18.3 | 64 | 55.7 | 30 | 26.1 | 0.927 | 1.95 | 21/70 |
| | | Administrators | 4 | 5.4 | 0 | 0.0 | 4 | 94.6 | 12 | 17.1 | 41 | 58.6 | 17 | 24.3 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 92.0 | 8 | 34.8 | 11 | 47.8 | 4 | 17.4 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 1.11 | Operate a surveillance system. | Professionals | 5 | 5.9 | 2 | 10.8 | 7 | 94.1 | 30 | 26.8 | 50 | 44.6 | 32 | 28.6 | 0.415 | 1.92 | 22/70 |
| | | Administrators | 6 | 10.8 | 2 | 10.8 | 8 | 89.2 | 12 | 18.2 | 34 | 51.5 | 20 | 30.3 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 92.0 | 11 | 47.8 | 10 | 43.5 | 2 | 8.7 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | |
| 1.1 | Identify responsibilities within public health. | Professionals | 0 | 0.8 | 1 | 4.1 | 1 | 99.2 | 12 | 10.2 | 71 | 60.2 | 35 | 29.7 | 0.565 | 1.89 | 23/70 |
| | | Administrators | 3 | 4.1 | 0 | 0.0 | 3 | 95.9 | 8 | 11.3 | 47 | 66.2 | 16 | 22.5 | | | |
| | | Academics | 2 | 8.0 | 0 | 0.0 | 2 | 92.0 | 6 | 26.1 | 12 | 52.2 | 5 | 21.7 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 2 | 20.0 | 7 | 70.0 | 1 | 10.0 | | | |
| 1.3 | Apply basic public health sciences. | Professionals | 0 | 3.4 | 4 | 5.4 | 4 | 96.6 | 22 | 19.1 | 61 | 53.0 | 32 | 27.8 | 0.165 | 1.87 | 24/70 |
| | | Administrators | 2 | 5.4 | 2 | 5.4 | 4 | 94.6 | 10 | 14.3 | 47 | 67.1 | 13 | 18.6 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 92.0 | 6 | 26.1 | 12 | 52.2 | 5 | 21.7 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 100.0 | 4 | 40.0 | 4 | 40.0 | 2 | 20.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|---|----------|------|-------|---------------|----------------|----|-----------|----|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 4.2 | Identify the role of cultural factors in service delivery. | Professionals | 2 | 3 | 5 | 4.2 | 95.8 | 19 | 16.7 | 57 | 50.0 | 38 | 33.3 | 0.407 | 1.85 | 25/70 |
| | | Administrators | 5 | 3 | 8 | 10.9 | 89.2 | 11 | 16.7 | 39 | 59.1 | 16 | 24.2 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 8 | 33.3 | 11 | 45.8 | 5 | 20.8 | | | |
| | | MOPH | 1 | 0 | 1 | 10.0 | 90.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | | | |
| 1.13 | Apply ethical conduct. | Professionals | 3 | 3 | 6 | 5.0 | 95.0 | 19 | 16.8 | 55 | 48.7 | 39 | 34.5 | 0.042 | 1.81 | 27/70 |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 10 | 14.5 | 46 | 66.7 | 13 | 18.8 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 7 | 30.4 | 10 | 43.5 | 6 | 26.1 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |
| 1.4 | Assess the health status of populations. | Professionals | 0 | 1 | 1 | 0.8 | 99.2 | 21 | 17.8 | 57 | 48.3 | 40 | 33.9 | 0.376 | 1.80 | 28/70 |
| | | Administrators | 3 | 1 | 4 | 5.5 | 94.6 | 11 | 15.7 | 41 | 58.6 | 18 | 25.7 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 5 | 21.7 | 14 | 60.9 | 4 | 17.4 | | | |
| | | MOPH | 0 | 0 | 0 | 0.0 | 100.0 | 1 | 10.0 | 7 | 70.0 | 2 | 20.0 | | | |
| 2.7 | Make relevant inferences from data. | Professionals | 2 | 2 | 4 | 3.4 | 96.6 | 15 | 13.0 | 59 | 51.3 | 41 | 35.7 | 0.215 | 1.80 | 28/70 |
| | | Administrators | 4 | 2 | 6 | 8.1 | 91.9 | 12 | 17.6 | 40 | 58.8 | 16 | 23.5 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 5 | 21.7 | 11 | 47.8 | 7 | 30.4 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 4 | 40.0 | 2 | 20.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|-----|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | N | N | % | | % | N | % | N | % | N | | | |
| 5.13 | Create a culture of ethical standards. | Professionals | 3 | 4 | 7 | 5.9 | 94.1 | 10 | 8.9 | 57 | 50.9 | 45 | 40.2 | 0.113 | 1.80 | 28/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 7 | 10.3 | 44 | 64.7 | 17 | 25.0 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 4 | 16.7 | 12 | 50.0 | 8 | 33.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 8.1 | Develop and present a budget. | Professionals | 2 | 8 | 10 | 8.4 | 91.6 | 14 | 12.8 | 52 | 47.7 | 43 | 39.4 | 0.018 | 1.80 | 31/70 |
| | | Administrators | 4 | 2 | 6 | 8.1 | 91.9 | 12 | 17.6 | 43 | 63.2 | 16 | 19.1 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 9 | 37.5 | 11 | 45.8 | 4 | 16.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 2 | 20.0 | 5 | 50.0 | 3 | 30.0 | | | |
| 2.10 | Evaluate data. | Professionals | 1 | 2 | 3 | 2.5 | 97.5 | 13 | 11.2 | 56 | 48.3 | 47 | 40.5 | 0.619 | 1.70 | 35/70 |
| | | Administrators | 3 | 2 | 5 | 6.8 | 93.2 | 9 | 13.0 | 37 | 53.6 | 23 | 33.3 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 2 | 8.7 | 16 | 69.6 | 5 | 21.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |
| 5.1 | Prepare and implement emergency plans. | Professionals | 1 | 8 | 9 | 7.5 | 92.4 | 13 | 11.8 | 49 | 44.5 | 48 | 43.6 | 0.035 | 1.70 | 35/70 |
| | | Administrators | 4 | 1 | 5 | 6.8 | 93.2 | 12 | 17.4 | 40 | 58.0 | 17 | 24.6 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 5 | 21.7 | 12 | 52.2 | 6 | 26.1 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | | |
|---|--|----------------|------------------|------|----------|------|------|---------------|----------------|----|-----------|----|----------------------|-------|------|----------------|------|-------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | | | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² | | |
| 8.4 | Determine budget priorities. | Professionals | 2 | 7.6 | 7 | 10.9 | 9 | 7.6 | 92.4 | 15 | 13.6 | 48 | 43.6 | 47 | 42.7 | 0.008* | 1.70 | 35/70 |
| | | Administrators | 3 | 10.9 | 5 | 8.1 | 8 | 10.9 | 89.2 | 8 | 12.1 | 44 | 66.7 | 14 | 21.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 8 | 34.8 | 11 | 47.8 | 4 | 17.4 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |
| 2.2 | Determine appropriate use and limitations of data. | Professionals | 2 | 5.9 | 5 | 8.1 | 7 | 5.9 | 94.1 | 14 | 12.5 | 53 | 47.3 | 45 | 40.2 | 0.237 | 1.69 | 38/70 |
| | | Administrators | 6 | 8.1 | 0 | 0 | 6 | 8.1 | 91.9 | 9 | 13.2 | 40 | 58.8 | 19 | 27.9 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 8 | 34.8 | 11 | 47.8 | 4 | 17.4 | | | |
| | | MOPH | 0 | 10.0 | 1 | 10.0 | 1 | 10.0 | 90.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | | | |
| 2.12 | Obtain and interpret community risks and benefits. | Professionals | 2 | 5.9 | 5 | 8.1 | 7 | 5.9 | 94.1 | 14 | 12.5 | 54 | 48.2 | 44 | 39.3 | 0.151 | 1.66 | 42/70 |
| | | Administrators | 4 | 6.8 | 1 | 8.1 | 5 | 6.8 | 93.2 | 8 | 11.6 | 43 | 62.3 | 18 | 26.1 | | | |
| | | Academics | 1 | 4.0 | 0 | 0 | 1 | 4.0 | 96.0 | 5 | 20.8 | 12 | 50.0 | 7 | 29.2 | | | |
| | | MOPH | 1 | 10.0 | 0 | 0 | 1 | 10.0 | 90.0 | 2 | 22.2 | 3 | 33.3 | 4 | 44.4 | | | |
| 8.2 | Manage programs without budget constraints. | Professionals | 2 | 6.7 | 6 | 10.9 | 8 | 6.7 | 93.3 | 14 | 12.6 | 46 | 41.4 | 51 | 45.9 | 0.010 | 1.63 | 44/70 |
| | | Administrators | 3 | 10.9 | 5 | 8.1 | 8 | 10.9 | 89.2 | 8 | 12.1 | 42 | 63.6 | 16 | 24.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 9 | 39.1 | 11 | 47.8 | 3 | 13.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 5 | 50.0 | 4 | 40.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | | |
|---|---|----------------|------------------|------|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank | | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² | |
| 5.9 | Create key values and shared vision. | Professionals | 1 | 5.0 | 5 | 6.0 | 6 | 5.0 | 95.0 | 10 | 8.8 | 52 | 46.0 | 51 | 45.1 | 0.075 | 1.62 | 45/70 |
| | | Administrators | 5 | 8.2 | 1 | 6.0 | 6 | 8.2 | 91.9 | 5 | 7.4 | 43 | 63.2 | 20 | 29.4 | | | |
| | | Academics | 1 | 8.0 | 1 | 2.0 | 2 | 8.0 | 92.0 | 3 | 13.0 | 10 | 43.5 | 10 | 43.5 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 100 | 2 | 20.0 | 6 | 60.0 | 2 | 20.0 | | | |
| 1.6 | Identify and access scientific evidence. | Professionals | 3 | 9.2 | 8 | 11.0 | 11 | 9.2 | 90.8 | 14 | 13.0 | 47 | 43.5 | 47 | 43.5 | 0.567 | 1.57 | 46/70 |
| | | Administrators | 3 | 5.5 | 1 | 4.0 | 4 | 5.5 | 94.6 | 7 | 10.0 | 36 | 51.4 | 27 | 38.6 | | | |
| | | Academics | 1 | 8.0 | 1 | 2.0 | 2 | 8.0 | 92.0 | 3 | 13.0 | 13 | 56.5 | 7 | 30.4 | | | |
| | | MOPH | 1 | 10.0 | 0 | 1.0 | 1 | 10.0 | 90.0 | 2 | 22.2 | 5 | 55.6 | 2 | 22.2 | | | |
| 5.11 | Use appropriate methods that effect change. | Professionals | 1 | 7.5 | 8 | 9.0 | 9 | 7.5 | 92.4 | 5 | 4.5 | 50 | 45.5 | 55 | 50.0 | 0.002* | 1.54 | 48/70 |
| | | Administrators | 6 | 12.2 | 3 | 9.0 | 9 | 12.2 | 87.8 | 10 | 15.4 | 38 | 58.5 | 17 | 26.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 2.0 | 2 | 8.0 | 92.0 | 3 | 13.0 | 11 | 47.8 | 9 | 39.1 | | | |
| | | MOPH | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 100 | 3 | 30.0 | 3 | 30.0 | 4 | 40.0 | | | |
| 3.5 | Decide on the appropriate course of action. | Professionals | 1 | 10.0 | 11 | 12.0 | 12 | 10.0 | 89.9 | 7 | 6.5 | 51 | 47.7 | 49 | 45.8 | 0.057 | 1.53 | 49/70 |
| | | Administrators | 6 | 9.5 | 1 | 7.0 | 7 | 9.5 | 90.5 | 8 | 11.9 | 40 | 59.7 | 19 | 28.4 | | | |
| | | Academics | 1 | 8.0 | 1 | 2.0 | 2 | 8.0 | 92.0 | 3 | 13.0 | 17 | 73.9 | 3 | 13.0 | | | |
| | | MOPH | 0 | 10.0 | 1 | 1.0 | 1 | 10.0 | 90.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value< 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 5.10 | Identify issues through strategic planning. | Professionals | 1 | 9 | 10 | 8.4 | 91.6 | 6 | 5.5 | 47 | 43.1 | 56 | 51.4 | 0.024 | 1.34 | 63/70 |
| | | Administrators | 8 | 3 | 11 | 14.9 | 85.1 | 6 | 9.5 | 38 | 60.3 | 19 | 30.2 | | | |
| | | Academics | 1 | 4 | 2 | 8.0 | 92.0 | 3 | 13.0 | 10 | 43.5 | 10 | 43.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 5 | 50.0 | 4 | 40.0 | | | |
| B | Suggested Core Public Health Skills | | | | | | | | | | | | | | | |
| 6.4 | Lead and participate in-groups. | Professionals | 5 | 4 | 9 | 7.6 | 92.4 | 15 | 13.6 | 69 | 62.7 | 26 | 23.6 | 0.555 | 1.83 | 26/70 |
| | | Administrators | 4 | 2 | 6 | 8.1 | 91.9 | 12 | 17.6 | 44 | 64.7 | 12 | 17.6 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 9 | 40.9 | 11 | 50.0 | 2 | 9.1 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 5 | 50.0 | 2 | 20.0 | | | |
| 7.4 | Use management skills to build partnerships. | Professionals | 1 | 3 | 4 | 3.3 | 96.6 | 19 | 16.5 | 55 | 47.8 | 41 | 35.7 | 0.155 | 1.80 | 31/70 |
| | | Administrators | 3 | 3 | 6 | 8.2 | 91.9 | 14 | 20.6 | 39 | 57.4 | 15 | 22.1 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 12 | 54.5 | 6 | 27.3 | 4 | 18.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |
| 2.6 | Use appropriate data collection. | Professionals | 3 | 3 | 6 | 5.0 | 95.0 | 22 | 19.5 | 60 | 53.1 | 31 | 27.4 | 0.779 | 1.75 | 33/70 |
| | | Administrators | 4 | 3 | 7 | 9.5 | 90.5 | 14 | 20.9 | 32 | 47.8 | 21 | 31.3 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 6 | 27.3 | 13 | 59.1 | 3 | 13.6 | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 6 | 66.7 | 2 | 22.2 | 1 | 11.1 | | | |

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³ p value< 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|------|------|---------------|----------------|----|-----------|----|----------------------|--------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | N | N | % | | | % | N | % | N | | | | % |
| 8.6 | Develop proposals for funding. | Professionals | 4 | 7 | 11 | 9.3 | 90.8 | 16 | 14.8 | 50 | 46.3 | 42 | 38.9 | 0.283 | 1.71 | 34/70 |
| | | Administrators | 4 | 3 | 7 | 9.5 | 90.5 | 9 | 13.4 | 39 | 58.2 | 19 | 28.4 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 8 | 36.4 | 10 | 45.5 | 4 | 18.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 4 | 40.0 | 2 | 20.0 | | | |
| 5.2 | Develop plans. | Professionals | 3 | 9 | 12 | 10.1 | 89.9 | 9 | 8.4 | 47 | 43.9 | 51 | 47.7 | 0.001* | 1.67 | 39/70 |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 14 | 20.3 | 41 | 59.4 | 14 | 20.3 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 3 | 13.6 | 13 | 59.1 | 6 | 27.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | |
| 5.8 | Promote team learning and organisation learning. | Professionals | 1 | 5 | 6 | 5.0 | 95.0 | 10 | 8.8 | 53 | 46.9 | 50 | 44.2 | 0.034 | 1.67 | 39/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 10 | 14.9 | 40 | 59.7 | 17 | 25.4 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 4 | 18.2 | 12 | 54.5 | 6 | 27.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 5 | 50.0 | 2 | 20.0 | | | |
| 8.5 | Monitor program performance. | Professionals | 4 | 9 | 13 | 11.0 | 89.1 | 13 | 12.3 | 49 | 46.2 | 44 | 41.5 | 0.366 | 1.67 | 39/70 |
| | | Administrators | 7 | 2 | 9 | 12.2 | 87.8 | 13 | 15.4 | 35 | 53.8 | 20 | 30.8 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 9 | 39.1 | 10 | 43.5 | 4 | 17.4 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 2 | 20.0 | 4 | 40.0 | 4 | 40.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 2.3 | Select and define variables. | Professionals | 4 | 3 | 7 | 5.9 | 94.1 | 13 | 11.6 | 56 | 50.0 | 43 | 38.4 | 0.020 | 1.66 | 42/70 | |
| | | Administrators | 5 | 3 | 8 | 10.9 | 89.2 | 14 | 21.2 | 39 | 59.1 | 13 | 19.7 | | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 6 | 25.0 | 12 | 50.0 | 6 | 25.0 | | | | |
| | | MOPH | 1 | 1 | 2 | 20.0 | 80.0 | 3 | 37.5 | 4 | 50.0 | 1 | 12.5 | | | | |
| 5.4 | Develop monitoring and evaluation. | Professionals | 3 | 10 | 13 | 10.9 | 89.1 | 7 | 6.6 | 42 | 39.6 | 57 | 53.8 | 0.000* | 1.55 | 47/70 | |
| | | Administrators | 4 | 4 | 8 | 10.8 | 89.2 | 10 | 15.2 | 41 | 62.1 | 15 | 22.7 | | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 2 | 8.3 | 13 | 54.2 | 9 | 37.5 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 7 | 70.0 | 2 | 20.0 | | | | |
| 3.6 | Utilise current techniques in analysis and planning. | Professionals | 3 | 8 | 11 | 9.2 | 90.8 | 8 | 7.4 | 51 | 47.2 | 49 | 45.4 | 0.020 | 1.52 | 50/70 | |
| | | Administrators | 2 | 0 | 2 | 2.7 | 97.3 | 6 | 8.3 | 48 | 66.7 | 18 | 25.0 | | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 1 | 4.5 | 13 | 59.1 | 8 | 36.4 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 6 | 60.0 | 3 | 30.0 | | | | |
| 6.3 | Advocate for public health. | Professionals | 3 | 10 | 13 | 10.9 | 89.1 | 6 | 5.7 | 61 | 57.5 | 39 | 36.8 | 0.487 | 1.52 | 50/70 | |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 7 | 10.4 | 38 | 56.7 | 22 | 32.8 | | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 4 | 17.4 | 9 | 39.1 | 10 | 43.5 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 6 | 60.0 | 3 | 30.0 | | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | |
|---|---|----------------|------------------|------|----------|------|--------|---------------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 2.4 | Use basic research designs and methods. | Professionals | 2 | 8.4 | 8 | 91.6 | 11 | 10.1 | 50 | 45.9 | 48 | 44.0 | 0.012 | 1.49 | 52/70 | |
| | | Administrators | 4 | 9.5 | 3 | 90.5 | 7 | 10.4 | 45 | 67.2 | 15 | 22.4 | | | | |
| | | Academics | 1 | 12.0 | 2 | 88.0 | 4 | 18.2 | 12 | 54.5 | 6 | 27.3 | | | | |
| | | MOPH | 0 | 10.0 | 1 | 90.0 | 3 | 33.3 | 4 | 44.4 | 2 | 22.2 | | | | |
| 5.6 | Apply theory of organisation. | Professionals | 2 | 9.3 | 9 | 90.8 | 6 | 5.6 | 41 | 38.0 | 61 | 56.5 | 0.003* | 1.49 | 52/70 | |
| | | Administrators | 6 | 10.8 | 2 | 89.2 | 10 | 15.2 | 35 | 53.0 | 21 | 31.8 | | | | |
| | | Academics | 1 | 12.0 | 2 | 88.0 | 3 | 13.6 | 10 | 45.5 | 9 | 40.9 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 2 | 20.0 | 6 | 60.0 | 2 | 20.0 | | | | |
| 8.3 | Apply budget processes. | Professionals | 2 | 7.6 | 7 | 92.4 | 13 | 11.8 | 55 | 50.0 | 42 | 38.2 | 0.151 | 1.49 | 52/70 | |
| | | Administrators | 4 | 10.8 | 4 | 89.2 | 11 | 16.7 | 39 | 59.1 | 16 | 24.2 | | | | |
| | | Academics | 1 | 4.0 | 0 | 96.0 | 9 | 37.5 | 10 | 41.7 | 5 | 20.8 | | | | |
| | | MOPH | 2 | 30.0 | 1 | 70.0 | 1 | 14.3 | 3 | 42.9 | 3 | 42.9 | | | | |
| 1.8 | Apply risk assessment. | Professionals | 3 | 11.7 | 11 | 88.2 | 19 | 18.1 | 43 | 41.0 | 43 | 41.0 | 0.125 | 1.47 | 55/70 | |
| | | Administrators | 4 | 9.5 | 3 | 90.5 | 8 | 11.9 | 38 | 56.7 | 21 | 31.3 | | | | |
| | | Academics | 1 | 12.0 | 2 | 88.0 | 4 | 18.2 | 11 | 50.0 | 7 | 31.8 | | | | |
| | | MOPH | 0 | 10.0 | 1 | 90.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|------|--------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | N | N | % | | N | % | N | % | N | % | X ² | | |
| 3.7 | Identify policies for specific programs. | Professionals | 1 | 15 | 16 | 13.4 | 86.6 | 4 | 3.9 | 48 | 46.6 | 51 | 49.5 | 0.082 | 1.47 | 55/70 |
| | | Administrators | 2 | 2 | 4 | 5.4 | 94.6 | 5 | 7.1 | 42 | 60.0 | 23 | 32.9 | | | |
| | | Academics | 2 | 0 | 2 | 8.0 | 92.0 | 1 | 4.3 | 16 | 69.6 | 6 | 26.1 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 0 | 0.0 | 7 | 70.0 | 3 | 30.0 | | | |
| 1.2 | Use basic research designs and methods. | Professionals | 1 | 9 | 10 | 8.4 | 91.6 | 7 | 6.4 | 52 | 47.4 | 50 | 45.9 | 0.665 | 1.46 | 57/70 |
| | | Administrators | 2 | 4 | 6 | 8.1 | 91.9 | 6 | 8.8 | 35 | 51.5 | 27 | 39.7 | | | |
| | | Academics | 2 | 1 | 3 | 12.0 | 88.0 | 3 | 13.6 | 10 | 45.5 | 9 | 40.9 | | | |
| | | MOPH | 0 | 0 | 0 | 0.0 | 100.0 | 1 | 10.0 | 6 | 60.0 | 3 | 30.0 | | | |
| 3.1 | Collect, summarise, and interpret information. | Professionals | 1 | 7 | 8 | 6.7 | 93.3 | 8 | 7.2 | 53 | 47.7 | 50 | 45.0 | 0.086 | 1.46 | 57/70 |
| | | Administrators | 3 | 3 | 6 | 8.2 | 91.9 | 3 | 4.4 | 44 | 64.7 | 21 | 30.9 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 1 | 4.5 | 15 | 68.2 | 6 | 27.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 5 | 50.0 | 4 | 40.0 | | | |
| 1.9 | Use information packages. | Professionals | 3 | 14 | 17 | 14.3 | 85.7 | 19 | 18.6 | 39 | 38.2 | 44 | 43.1 | 0.104 | 1.45 | 59/70 |
| | | Administrators | 7 | 4 | 11 | 14.9 | 85.1 | 5 | 7.9 | 32 | 50.8 | 26 | 41.3 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 5 | 22.7 | 11 | 50.0 | 6 | 27.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0.00 | 100 | 2 | 20.0 | 5 | 50.0 | 3 | 30.0 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|---|---|----------------|------------------|----|----------|------|-------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 5.3 | Translate policy into organisational plans. | Professionals | 1 | 10 | 11 | 9.2 | 90.8 | 10 | 9.3 | 40 | 37.0 | 58 | 53.7 | 0.001* | 1.43 | 60/70 | |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 7 | 10.3 | 43 | 63.2 | 18 | 26.5 | | | | |
| | | Academics | 1 | 4 | 5 | 20.0 | 80.0 | 2 | 10.0 | 11 | 55.0 | 7 | 35.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 2 | 20.0 | 6 | 60.0 | 2 | 20.0 | | | | |
| 1.5 | Apply critical thinking. | Professionals | 1 | 13 | 12 | 11.7 | 88.2 | 2 | 3.2 | 29 | 46.8 | 31 | 50.0 | 0.404 | 1.41 | 61/70 | |
| | | Administrators | 5 | 7 | 14 | 16.3 | 83.8 | 9 | 8.6 | 46 | 43.8 | 50 | 47.6 | | | | |
| | | Academics | 1 | 3 | 4 | 16.0 | 84.0 | 7 | 33.3 | 8 | 38.1 | 6 | 28.6 | | | | |
| | | MOPH | 0 | 0 | 0 | 0.0 | 100.0 | 2 | 20.0 | 4 | 40.0 | 4 | 40.0 | | | | |
| 5.7 | Contribute to organisational performance standards. | Professionals | 1 | 11 | 12 | 10.0 | 89.9 | 5 | 4.7 | 45 | 42.1 | 57 | 53.3 | 0.046 | 1.34 | 62/70 | |
| | | Administrators | 9 | 1 | 10 | 13.6 | 86.5 | 6 | 9.4 | 36 | 56.3 | 22 | 34.4 | | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 2 | 8.3 | 12 | 50.0 | 10 | 41.7 | | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 1 | 11.1 | 4 | 44.4 | 4 | 44.4 | | | | |
| 2.11 | Illuminate issues from data. | Professionals | 2 | 15 | 17 | 14.3 | 85.7 | 8 | 7.8 | 44 | 43.1 | 50 | 49.0 | 0.007* | 1.25 | 64/70 | |
| | | Administrators | 5 | 5 | 10 | 13.6 | 86.5 | 5 | 7.8 | 43 | 67.2 | 16 | 25.0 | | | | |
| | | Academics | 1 | 3 | 4 | 16.0 | 84.0 | 2 | 9.5 | 12 | 57.1 | 7 | 33.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 0 | 0.0 | 6 | 60.0 | 4 | 40.0 | | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|------|------|---------------|----------------|----|-----------|----|----------------------|--------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | Knowledge able | | Awareness | | p value ³ | Value | Rank | |
| | | | N | N | N | % | | % | N | % | N | % | N | | | % |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | Professionals | 1 | 11 | 12 | 10.0 | 89.9 | 7 | 6.5 | 37 | 34.6 | 63 | 58.9 | 0.006* | 1.22 | 65/70 |
| | | Administrators | 4 | 5 | 9 | 12.2 | 87.8 | 7 | 10.8 | 36 | 55.4 | 22 | 33.8 | | | |
| | | Academics | 1 | 4 | 5 | 20.0 | 80.0 | 1 | 5.0 | 9 | 45.0 | 10 | 50.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 5 | 50.0 | 4 | 40.0 | | | |
| 1.7 | Identify limitations of research. | Professionals | 1 | 16 | 17 | 14.2 | 85.7 | 9 | 8.8 | 33 | 32.4 | 60 | 58.8 | 0.162 | 1.19 | 66/70 |
| | | Administrators | 6 | 3 | 9 | 12.2 | 87.8 | 3 | 4.6 | 30 | 46.2 | 32 | 49.2 | | | |
| | | Academics | 1 | 2 | 3 | 12.0 | 88.0 | 1 | 4.5 | 10 | 45.5 | 11 | 50.0 | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 1 | 11.1 | 7 | 77.8 | 1 | 11.1 | | | |
| 3.4 | State expected outcome of policy options. | Professionals | 1 | 10 | 11 | 9.2 | 90.8 | 3 | 2.8 | 42 | 38.9 | 63 | 58.3 | 0.124 | 1.09 | 67/70 |
| | | Administrators | 3 | 4 | 7 | 9.5 | 90.5 | 4 | 6.0 | 34 | 50.7 | 29 | 43.3 | | | |
| | | Academics | 2 | 2 | 4 | 16.0 | 84.0 | 0 | 0.0 | 10 | 47.6 | 11 | 52.4 | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 0 | 0.0 | 4 | 44.4 | 5 | 55.6 | | | |
| 3.2 | State policy options. | Professionals | 1 | 12 | 13 | 10.9 | 89.1 | 3 | 2.8 | 41 | 38.7 | 62 | 58.5 | 0.369 | 1.01 | 68/70 |
| | | Administrators | 4 | 3 | 7 | 9.5 | 90.5 | 3 | 4.5 | 32 | 47.8 | 32 | 47.8 | | | |
| | | Academics | 2 | 3 | 5 | 20.0 | 80.0 | 0 | 0.0 | 10 | 50.0 | 10 | 50.0 | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

Table-5.27: Suggested Public Health Skills for Front-line Staff Ranked by the Weighted Mean (Cont.)

| SN Competency Domain & Skill ² | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|---|--|----------------|------------------|----------|-------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ³ | Value | Rank |
| | | | N | N | N | % | | % | N | % | N | % | N | | | |
| C | Non Core Public Health Skills | | | | | | | | | | | | | | | |
| 1.10 | Design a surveillance system. | Professionals | 3 | 17 | 20 | 16.8 | 83.2 | 13 | 13.1 | 45 | 45.5 | 41 | 41.4 | 0.497 | 0.97 | 69/70 |
| | | Administrators | 6 | 7 | 13 | 17.6 | 82.4 | 5 | 8.2 | 26 | 42.6 | 30 | 49.2 | | | |
| | | Academics | 1 | 3 | 4 | 16.0 | 84.0 | 4 | 19.0 | 9 | 42.9 | 8 | 38.1 | | | |
| | | MOPH | 0 | 2 | 2 | 20.0 | 80.0 | 0 | 0.0 | 5 | 62.5 | 3 | 37.5 | | | |
| 3.3 | Articulate implications of policy options. | Professionals | 1 | 15 | 16 | 13.4 | 86.6 | 2 | 1.9 | 33 | 32.0 | 68 | 66.0 | 0.141 | 0.87 | 70/70 |
| | | Administrators | 3 | 3 | 6 | 8.2 | 91.9 | 3 | 4.4 | 30 | 44.1 | 35 | 51.5 | | | |
| | | Academics | 1 | 3 | 4 | 16.0 | 84.0 | 0 | 0.0 | 10 | 47.6 | 11 | 52.4 | | | |
| | | MOPH | 1 | 2 | 3 | 30.0 | 70.0 | 0 | 0.0 | 4 | 57.1 | 3 | 42.9 | | | |

² The 1st digit refers to the competency domain (1 = Basic Public Health Skills, 2= Analytical Skills, 3= Policy Development Skills, 4= Social Skills, 5= Strategic Mgt. Skills, 6= Communication Skills, 7= Partnership Skills, 8= Operational Mgt. Skills), the 2nd refers to the skill number within the competency domain.

³ p value < 0.01 indicated with *

3) Level of Mastery in Public Health Skills required for Mid-level Management Staff

(a) Not Core Skills

None of the 70 Skills was considered by all Constituencies as Not to be a Core Skill for Mid-level Management Staff.

(b) Core Skills

Based upon Table-5.21, 65 of the 70 Skills were clearly considered to be a Core Skill by 3 or 4 of the Constituencies and 5 were considered Not to be a Core Skill by 1-2 of the Constituencies. This latter group required further study; which is the subject of Section A.6. The discussion, which follows, deals with those Skills that are considered to be Core Skills.

In reviewing the Levels of Mastery required for each of the Core Skills, respondents expected Mid-level Staff to be Knowledgeable or Proficient. Not a single Constituency did consider the level of Awareness for any of the 70 Skills. There were differences whether the Level of Mastery required for should be at the level of Proficiency (Table-5.28) or the level of being Knowledgeable (Table-5.29) The criterion used in identifying Skills per Level of Mastery and for each Constituency was a Frequency of $\geq 50\%$.

Of the 65 Skills considered by Constituencies to be a Core Skill, the Level of Mastery expected by Professionals was Proficiency for only one Skill (Operational Management Skill No. 5 'Monitor program performance'). Administrators expected Proficiency for 3 Skills also from the Operational Management Skills (# 1 'Develop and present a budget', # 4 'Determine budget priorities' and # 5 'Monitor program performance'). In strong contrast with Professionals and Administrators, Academics and MOPH representatives (Table-5.32) expected Proficiency for 41 and 44 Skills respectively. Table-5.28 shows those Skills for which two Constituencies or more agreed on Proficiency as the required Level of Mastery.

Table-5.28: Skills Considered being Core Skills for Mid-level Management Staff, Requiring Proficiency by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|--|---------------|----------------|-----------|------|
| 1. | Basic Public Health Skills | | | | |
| 1.5 | Apply critical thinking. | 26.7 | 27.7 | 65.2 | 55.6 |
| 1.11 | Operate a surveillance system. | 34.2 | 30.6 | 56.5 | 70.0 |
| 1.12 | Use computer applications. | 33.3 | 26.6 | 54.2 | 70.0 |
| 1.13 | Apply ethical conduct. | 30.6 | 23.9 | 56.5 | 50.0 |
| 2. | Analytical Skills | | | | |
| 2.1 | Define a problem. | 44.3 | 37.9 | 66.7 | 80.0 |
| 2.2 | Determine appropriate use and limitations of data. | 39.1 | 26.9 | 69.6 | 70.0 |
| 2.3 | Select and define variables. | 37.7 | 34.3 | 56.5 | 66.7 |
| 2.7 | Make relevant inferences from data. | 42.9 | 28.4 | 54.2 | 70.0 |
| 2.10 | Evaluate data. | 36.0 | 29.6 | 65.2 | 60.0 |
| 3. | Policy Development Skills | | | | |
| 3.6 | Utilise current techniques in analysis and planning. | 33.0 | 36.6 | 65.2 | 60.0 |
| 3.7 | Identify policies for specific programs. | 26.7 | 42.3 | 54.2 | 50.0 |
| 5. | Strategic Management Skill | | | | |
| 5.1 | Prepare and implement emergency plans. | 37.4 | 39.7 | 52.2 | 60.0 |
| 5.2 | Develop plans. | 36.3 | 41.2 | 56.5 | 70.0 |
| 5.3 | Translate policy into organisational. | 33.6 | 47.1 | 56.5 | 70.0 |
| 5.4 | Monitor and evaluate programs. | 40.5 | 39.7 | 58.3 | 50.0 |
| 5.8 | Promote team learning and organisation learning. | 31.0 | 34.3 | 56.5 | 60.0 |
| 6. | Communication Skills | | | | |
| 6.1 | Communicate effectively. | 43.0 | 40.8 | 75.0 | 80.0 |
| 6.2 | Solicit input from individuals and organisations. | 36.6 | 39.4 | 58.3 | 70.0 |
| 6.4 | Lead and participate in-groups. | 43.4 | 39.1 | 52.2 | 60.0 |
| 6.6 | Listen to others in an unbiased manner. | 45.6 | 41.4 | 65.2 | 60.0 |
| 6.7 | Make accurate and effective presentations. | 49.6 | 38.6 | 78.3 | 80.0 |
| 7. | Partnership Skills | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 48.6 | 36.6 | 73.9 | 60.0 |
| 7.3 | Mobilise organisations within the community. | 39.3 | 41.4 | 54.2 | 50.0 |
| 7.4 | Use management skills to build partnerships. | 45.7 | 43.7 | 69.6 | 60.0 |
| 7.5 | Identify community resources. | 29.3 | 28.6 | 60.9 | 60.0 |
| 7.6 | Conduct a community assessment. | 38.8 | 29.6 | 69.6 | 70.0 |
| 8. | Operational Management Skills | | | | |
| 8.1 | Develop and present a budget. | 48.7 | 50.7 | 79.2 | 70.0 |
| 8.4 | Determine budget priorities. | 40.0 | 53.5 | 60.9 | 50.0 |
| 8.5 | Monitor program performance. | 50.4 | 54.3 | 73.9 | 70.0 |
| 8.6 | Develop proposals for funding. | 49.6 | 45.7 | 70.8 | 70.0 |
| 8.8 | Manage information systems for decision-making. | 38.3 | 37.1 | 75.0 | 50.0 |
| 8.9 | Apply ethical conduct. | 36.0 | 31.0 | 69.6 | 60.0 |

Of the 65 Skills considered to be a Core Skill, the Level of Mastery expected by Professionals was Knowledgeable for 54 skills. Administrators expected being Knowledgeable

for 58 skills. In strong contrast with Professionals and Administrators, Academics and MOPH representatives (Table-5.32) expected being Knowledgeable for 17 and 22 Skills respectively. Table-5.29 shows the Skills for which two or more Constituencies expected Knowledgeable as the required Level of Mastery.

Table-5.29: Skills Considered being Core Skills for Mid-level Management Staff, Requiring being Knowledgeable by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|--|---------------|----------------|-----------|------|
| 1. | Basic Public Health Skills | | | | |
| 1.1 | Identify responsibilities within public health. | 68.1 | 61.2 | 58.3 | 40.0 |
| 1.2 | Use basic research designs and methods. | 50.0 | 50.7 | 45.8 | 30.0 |
| 1.4 | Assess and define the health status of populations. | 45.3 | 56.5 | 33.3 | 60.0 |
| 1.5 | Apply critical thinking. | 53.4 | 55.4 | 26.1 | 44.4 |
| 1.8 | Apply risk assessment. | 57.0 | 55.2 | 56.5 | 20.0 |
| 1.10 | Design a surveillance system. | 50.9 | 60.3 | 47.8 | 40.0 |
| 1.11 | Operate a surveillance system. | 57.7 | 51.6 | 39.1 | 30.0 |
| 1.12 | Use computer applications. | 53.2 | 53.1 | 41.7 | 30.0 |
| 1.13 | Apply ethical conduct. | 58.6 | 62.7 | 34.8 | 40.0 |
| 2. | Analytical Skills | | | | |
| 2.2 | Determine appropriate use and limitations of data. | 54.8 | 62.7 | 26.1 | 30.0 |
| 2.3 | Select and define variables. | 55.3 | 52.2 | 30.4 | 33.3 |
| 2.4 | Use basic research designs and methods. | 50.4 | 60.3 | 43.5 | 30.0 |
| 2.5 | Partner with communities. | 59.3 | 59.1 | 41.7 | 60.0 |
| 2.6 | Use appropriate data collection. | 50.5 | 51.5 | 47.8 | 50.0 |
| 2.8 | Identify relevant and appropriate data. | 60.4 | 55.2 | 30.4 | 60.0 |
| 2.9 | Apply ethical principles. | 60.5 | 58.8 | 56.5 | 40.0 |
| 2.10 | Evaluate data. | 54.4 | 50.7 | 30.4 | 30.0 |
| 2.11 | Illuminate issues from data. | 58.8 | 66.2 | 65.2 | 30.0 |
| 2.12 | Obtain and interpret community risks and benefits. | 61.4 | 63.8 | 29.2 | 44.4 |
| 3. | Policy Development Skills | | | | |
| 3.1 | Collect, summarise and interpret information. | 57.8 | 58.0 | 52.2 | 60.0 |
| 3.3 | Articulate implications of policy options. | 57.8 | 56.3 | 60.9 | 80.0 |
| 3.5 | Decide on the appropriate course of action. | 62.1 | 57.4 | 34.8 | 60.0 |
| 3.6 | Utilise current techniques in analysis and planning. | 58.3 | 59.2 | 30.4 | 40.0 |
| 3.7 | Identify policies for specific programs. | 59.5 | 50.7 | 37.5 | 40.0 |
| 4 | Social Skills | | | | |
| 4.1 | Interact sensitivity, effectively and professionally. | 60.5 | 54.9 | 50.0 | 50.0 |
| 4.2 | Identify the role of cultural factors in service delivery. | 64.9 | 69.1 | 62.5 | 66.7 |
| 4.3 | Adapt problem solving to fit cultural differences. | 64.9 | 73.5 | 58.3 | 60.0 |
| 5. | Strategic Management Skill | | | | |
| 5.1 | Prepare and implement emergency plans. | 59.1 | 55.9 | 47.8 | 40.0 |
| 5.2 | Develop plans. | 57.5 | 55.9 | 39.1 | 30.0 |
| 5.3 | Translate policy into organisational plans. | 61.2 | 50.0 | 43.5 | 30.0 |

Table-5.29: Skills Considered being Core Skills for Mid-level Management Staff, Requiring being Knowledgeable by Two or More Constituencies (Cont.)

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|--|---------------|----------------|-----------|------|
| 5.4 | Develop monitoring and evaluation. | 56.0 | 55.9 | 37.5 | 50.0 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 50.0 | 53.8 | 56.5 | 40.0 |
| 5.6 | Apply theory of organisation. | 62.6 | 57.4 | 52.2 | 60.0 |
| 5.7 | Contribute to organisational performance standards. | 61.2 | 56.1 | 47.8 | 70.0 |
| 5.8 | Promote team learning and organisation learning. | 58.6 | 58.2 | 39.1 | 40.0 |
| 5.9 | Create key values and shared vision. | 63.5 | 60.9 | 47.8 | 40.0 |
| 5.10 | Identify issues through strategic planning. | 63.8 | 52.2 | 52.2 | 30.0 |
| 5.11 | Use appropriate methods that effect change. | 72.4 | 55.2 | 50.0 | 60.0 |
| 5.12 | Ensure participation of key stakeholders. | 62.3 | 63.4 | 58.3 | 60.0 |
| 5.13 | Create a culture of ethical standards. | 68.4 | 62.3 | 58.3 | 60.0 |
| 6. | Communication Skills | | | | |
| 6.1 | Communicate effectively. | 53.5 | 53.5 | 20.8 | 20.0 |
| 6.2 | Solicit input from individuals and organisations. | 59.8 | 60.6 | 37.5 | 30.0 |
| 6.3 | Advocate for public health. | 64.9 | 64.3 | 52.2 | 60.0 |
| 6.5 | Use appropriate channels to disseminate information. | 58.4 | 58.0 | 45.8 | 60.0 |
| 7. | Partnership Skills | | | | |
| 7.2 | Collaborate with community to promote health. | 51.8 | 60.3 | 29.2 | 70.0 |
| 7.3 | Mobilise organisations within the community. | 53.6 | 45.7 | 45.8 | 50.0 |
| 7.5 | Identify community resources. | 65.5 | 64.3 | 30.4 | 40.0 |
| 7.6 | Conduct a community assessment. | 56.0 | 66.2 | 30.4 | 30.0 |
| 8. | Operational Management Skills | | | | |
| 8.2 | Manage programs without budget constraints. | 59.6 | 50.7 | 21.7 | 60.0 |
| 8.3 | Apply budget processes. | 55.3 | 52.1 | 25.0 | 55.6 |
| 8.4 | Determine budget priorities. | 56.5 | 42.3 | 39.1 | 50.0 |
| 8.7 | Apply basic human relation skills. | 60.9 | 56.3 | 33.3 | 50.0 |
| 8.8 | Manage information systems for decision-making. | 56.5 | 55.7 | 20.8 | 40.0 |
| 8.9 | Apply ethical conduct. | 57.0 | 66.2 | 30.4 | 40.0 |

Tables 5.30 to 5.31 summarise the numbers of Skills, per Competency Domain, for each Level of Mastery by Constituency as follows:

Table-5.30: The Number of Skills for Mid-level Management Staff for which the Level of Mastery should be at the Level of Proficiency by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|--------------|---------------|----------------|----------|-----------|
| Basic Public Health Skills | 13 | 0 | 0 | 5 | 9 |
| Analytical Skills | 12 | 0 | 0 | 7 | 8 |
| Policy Development Skills | 7 | 0 | 0 | 3 | 2 |
| Social Skills | 3 | 0 | 0 | 0 | 1 |
| Strategic Management Skills | 13 | 0 | 0 | 5 | 8 |
| Communication Skills | 7 | 0 | 0 | 6 | 5 |
| Partnership Skills | 6 | 0 | 0 | 6 | 5 |
| Operational Management Skills | 9 | 1 | 3 | 9 | 6 |

Table-5.31: The Number of Skills for Mid-level Management Staff for which the Level of Mastery should be at the Level of Knowledgeable by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|--------------|---------------|----------------|----------|-----------|
| Basic Public Health Skills | 13 | 8 | 9 | 3 | 1 |
| Analytical Skills | 12 | 10 | 12 | 2 | 1 |
| Policy Development Skills | 7 | 5 | 5 | 2 | 3 |
| Social Skills | 3 | 3 | 3 | 3 | 3 |
| Strategic Management Skills | 13 | 13 | 13 | 6 | 6 |
| Communication Skills | 7 | 4 | 7 | 1 | 2 |
| Partnership Skills | 6 | 5 | 4 | 0 | 2 |
| Operational Management Skills | 9 | 6 | 5 | 0 | 4 |

(c) Comparisons between Professionals and Administrators

Also for Mid-level Management Staff, the responses of the two largest Constituencies, Professionals (119) and Administrators (74) were compared using the Chi-square test and the results are shown in Table-5.32. Only one of these comparisons was statistically significant at $p < 0.01$. Namely:

| Competency Domain | Skill # | Skill Description | p value |
|----------------------|---------|----------------------------------|---------|
| 2. Analytical Skills | 6 | Use appropriate data collection. | 0.004 |

(d) Weighted Means and Ranking

Determining the Weighted-Mean and Ranking for each of the 70 Skills, as shown in Table-5.32, further summarised data; the schema applied to arrive at the Weighted-Mean, the range and classification of the Mean was the same as for Front-line staff and explained under A.2.3 (b) point-4.

Based upon the Weighted-Mean, the 70 Skills were, then, ranked from high to low.

As shown below, the congruence between these scores and the previous determination as whether a skill was Core vs. Not-Core and for Core Skills the Level of Mastery was reasonable.

| Skills considered being | # | Range of weighted-mean | Range of Ranking |
|-------------------------|----|------------------------|------------------|
| Not Core Skills | 0 | - | - |
| Suggested Core Skills | 5 | 2.15-1.96 | 53-70 |
| Core Skills | 41 | 2.52-2.04 | 1-68 |

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|----------|-------|-----|--------|---------------|------|----------------|------|-----------|------|--|---------------|------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ X ² | Value | Rank |
| | | | N | N | N | % | | N | % | N | % | N | % | | | |
| A | Core Public Health Skills | | | | | | | | | | | | | | | |
| 8.1 | Develop and present a budget. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 56 | 48.7 | 55 | 47.8 | 4 | 3.5 | 0.945 | 2.52 | 1/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 36 | 50.7 | 33 | 46.5 | 2 | 2.8 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 19 | 79.2 | 4 | 16.7 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 6.1 | Communicate effectively. | Professionals | 5 | 0 | 5 | 4.2 | 95.8 | 49 | 43.0 | 61 | 53.5 | 4 | 3.5 | 0.777 | 2.49 | 2/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 29 | 40.8 | 38 | 53.5 | 4 | 5.6 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 18 | 75.0 | 5 | 20.8 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 8.6 | Develop proposals for funding. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 56 | 49.6 | 54 | 47.8 | 3 | 2.7 | 0.550 | 2.44 | 3/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 32 | 45.7 | 34 | 48.6 | 4 | 5.7 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 17 | 70.8 | 6 | 25.0 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |
| 6.7 | Make accurate and effective presentations. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 56 | 49.6 | 48 | 42.5 | 9 | 8.0 | 0.291 | 2.43 | 4/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 27 | 38.6 | 38 | 54.3 | 5 | 7.1 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 18 | 78.3 | 5 | 21.7 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 2.1 | Define a problem. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 51 | 14.3 | 55 | 47.8 | 9 | 7.8 | 0.560 | 2.42 | 5/70 |
| | | Administrators | 8 | 0 | 8 | 10.8 | 89.2 | 25 | 37.9 | 37 | 56.1 | 4 | 6.1 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 16 | 36.7 | 7 | 29.2 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 8.5 | Monitor program performance. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 57 | 50.4 | 51 | 45.1 | 5 | 4.4 | 0.766 | 2.42 | 5/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 38 | 54.3 | 28 | 40.0 | 4 | 5.7 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 17 | 73.9 | 6 | 26.1 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |
| 6.2 | Solicit input from individuals and organisations. | Professionals | 7 | 0 | 7 | 5.9 | 94.1 | 41 | 36.6 | 67 | 59.8 | 4 | 3.6 | 0.268 | 2.41 | 5/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 28 | 39.4 | 43 | 60.6 | 0 | 0.0 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 14 | 58.3 | 9 | 37.5 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 7.4 | Use management skills to build partnerships. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 53 | 45.7 | 58 | 50.0 | 5 | 4.3 | 0.719 | 2.39 | 8/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 31 | 43.7 | 35 | 49.3 | 5 | 7.0 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 16 | 69.6 | 6 | 26.1 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN/Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | | |
|------------------------------|---|----------------|------------------|-----|----------|---|--------|---------------|----|----------------|----|-----------|---|----------------------|---------------|------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 7.1 | Maintain linkages with key stakeholders. | Professionals | 8 | 6.7 | 0 | 0 | 8 | 93.3 | 54 | 48.6 | 52 | 46.8 | 5 | 4.5 | 0.259 | 2.37 | 9/70 |
| | | Administrators | 3 | 4.1 | 0 | 0 | 3 | 95.9 | 26 | 36.6 | 42 | 59.2 | 3 | 4.2 | | | |
| | | Academics | 2 | 8.0 | 0 | 0 | 2 | 92.0 | 17 | 73.9 | 5 | 21.7 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | |
| 7.6 | Conduct a community assessment. | Professionals | 3 | 2.5 | 0 | 0 | 3 | 97.5 | 45 | 38.8 | 65 | 56.0 | 6 | 5.2 | 0.386 | 2.37 | 9/70 |
| | | Administrators | 3 | 4.1 | 0 | 0 | 3 | 95.9 | 21 | 29.6 | 47 | 66.2 | 3 | 4.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 1 | 2 | 92.0 | 16 | 69.6 | 7 | 30.4 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 8.4 | Determine budget priorities. | Professionals | 4 | 3.4 | 0 | 0 | 4 | 96.6 | 46 | 40.0 | 65 | 56.5 | 4 | 3.5 | 0.166 | 2.36 | 11/70 |
| | | Administrators | 3 | 4.1 | 0 | 0 | 3 | 95.9 | 38 | 53.5 | 30 | 42.3 | 3 | 4.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 1 | 2 | 92.0 | 14 | 60.9 | 9 | 39.1 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 8.8 | Manage information systems for decision-making. | Professionals | 4 | 3.4 | 0 | 0 | 4 | 96.6 | 44 | 38.3 | 65 | 56.5 | 6 | 5.2 | 0.865 | 2.36 | 11/70 |
| | | Administrators | 4 | 5.4 | 0 | 0 | 4 | 94.6 | 26 | 37.1 | 39 | 55.7 | 5 | 7.1 | | | |
| | | Academics | 1 | 4.0 | 0 | 0 | 1 | 96.0 | 18 | 75.0 | 5 | 20.8 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN/Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|-----|------|---------------|----------------|----|-----------|---|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 5.3 | Translate policy into organisational plans. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 39 | 33.6 | 71 | 61.2 | 6 | 5.2 | 0.179 | 2.35 | 13/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 32 | 47.1 | 34 | 50.0 | 2 | 2.9 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 13 | 56.5 | 10 | 43.5 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 5.4 | Monitor and evaluate programs. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 47 | 40.5 | 65 | 56.0 | 4 | 3.4 | 0.946 | 2.35 | 13/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 27 | 39.7 | 38 | 55.9 | 3 | 4.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 14 | 58.3 | 9 | 37.5 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 6.6 | Listen to others in an unbiased manner. | Professionals | 5 | 0 | 5 | 4.2 | 95.8 | 52 | 45.6 | 55 | 48.2 | 7 | 6.1 | 0.684 | 2.35 | 13/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 29 | 41.4 | 38 | 54.3 | 3 | 4.3 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 15 | 65.2 | 7 | 30.4 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |
| 8.9 | Apply ethical conduct in practice. | Professionals | 5 | 0 | 5 | 4.2 | 95.8 | 41 | 36.0 | 65 | 57.0 | 8 | 7.0 | 0.308 | 2.34 | 16/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 22 | 31.0 | 47 | 66.2 | 2 | 2.8 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 16 | 69.6 | 7 | 30.4 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN/Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | | | |
|------------------------------|--|----------------|------------------|-----|----------|---|--------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|----------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² | |
| 3.6 | Utilise current techniques in analysis and planning. | Professionals | 4 | 3.4 | 0 | 0 | 4 | 3.4 | 96.6 | 38 | 33.0 | 67 | 58.3 | 10 | 8.7 | 0.491 | 2.32 | 17/70 |
| | | Administrators | 3 | 4.1 | 0 | 0 | 3 | 4.1 | 95.9 | 26 | 36.6 | 42 | 59.2 | 3 | 4.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 1 | 2 | 8.0 | 92.0 | 15 | 65.2 | 7 | 30.4 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 6 | 50.0 | 4 | 40.0 | 0 | 0.0 | | | |
| 5.2 | Develop plans. | Professionals | 6 | 5.0 | 0 | 0 | 6 | 5.0 | 95.0 | 41 | 36.3 | 65 | 57.5 | 7 | 6.2 | 0.551 | 2.32 | 17/70 |
| | | Administrators | 6 | 8.1 | 0 | 0 | 6 | 8.1 | 91.9 | 28 | 41.2 | 38 | 55.9 | 2 | 2.9 | | | |
| | | Academics | 1 | 8.0 | 1 | 1 | 2 | 8.0 | 92.0 | 13 | 56.5 | 9 | 39.1 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 7.3 | Mobilise organisations within the community. | Professionals | 6 | 5.8 | 1 | 1 | 7 | 5.8 | 94.1 | 44 | 39.3 | 60 | 53.6 | 8 | 7.1 | 0.353 | 2.32 | 17/70 |
| | | Administrators | 4 | 5.4 | 0 | 0 | 4 | 5.4 | 94.6 | 29 | 41.4 | 32 | 45.7 | 9 | 12.9 | | | |
| | | Academics | 1 | 4.0 | 0 | 0 | 1 | 4.0 | 96.0 | 13 | 54.2 | 11 | 45.8 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 8.7 | Apply basic human relation skills. | Professionals | 4 | 3.4 | 0 | 0 | 4 | 3.4 | 96.6 | 38 | 33.0 | 70 | 60.9 | 7 | 6.1 | 0.182 | 2.32 | 17/70 |
| | | Administrators | 3 | 4.1 | 0 | 0 | 3 | 4.1 | 95.9 | 30 | 42.3 | 40 | 56.3 | 1 | 1.4 | | | |
| | | Academics | 1 | 4.0 | 0 | 0 | 1 | 4.0 | 96.0 | 15 | 62.5 | 8 | 33.3 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|------|----------|------|------|---------------|----|----------------|---|-----------|-------|----------------------|---------------|------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 2.2 | Determine appropriate use and limitations of data. | Professionals | 4 | 3.4 | 0 | 96.6 | 45 | 39.1 | 63 | 54.8 | 7 | 6.1 | 0.188 | 2.31 | 21/70 | |
| | | Administrators | 7 | 9.5 | 0 | 90.5 | 18 | 26.9 | 42 | 62.7 | 7 | 10.4 | | | | |
| | | Academics | 1 | 8.0 | 1 | 92.0 | 16 | 69.6 | 6 | 26.1 | 1 | 4.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | | |
| 5.1 | Prepare and implement emergency plans. | Professionals | 3 | 3.3 | 1 | 96.6 | 43 | 37.4 | 68 | 59.1 | 4 | 3.5 | 0.889 | 2.30 | 22/70 | |
| | | Administrators | 6 | 8.1 | 0 | 91.9 | 27 | 39.7 | 38 | 55.9 | 3 | 4.4 | | | | |
| | | Academics | 1 | 8.0 | 1 | 92.0 | 12 | 52.2 | 11 | 47.8 | 0 | 0.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |
| 6.4 | Lead and participate in-groups. | Professionals | 6 | 5.0 | 0 | 95.0 | 49 | 43.4 | 56 | 49.6 | 8 | 7.1 | 0.850 | 2.30 | 22/70 | |
| | | Administrators | 5 | 6.8 | 0 | 93.2 | 27 | 39.1 | 37 | 53.6 | 5 | 7.2 | | | | |
| | | Academics | 1 | 8.0 | 1 | 92.0 | 12 | 52.2 | 11 | 47.8 | 0 | 0.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |
| 8.3 | Apply budget processes. | Professionals | 5 | 4.2 | 0 | 95.8 | 46 | 40.4 | 63 | 55.3 | 5 | 4.4 | 0.906 | 2.28 | 24/70 | |
| | | Administrators | 3 | 4.1 | 0 | 95.9 | 31 | 43.7 | 37 | 52.1 | 3 | 4.2 | | | | |
| | | Academics | 1 | 4.0 | 0 | 96.0 | 17 | 70.8 | 6 | 25.0 | 1 | 4.2 | | | | |
| | | MOPH | 1 | 10.0 | 0 | 90.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|-----|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 2.7 | Make relevant inferences from data. | Professionals | 4 | 3 | 7 | 5.9 | 94.1 | 48 | 42.9 | 55 | 49.1 | 9 | 8.0 | 0.121 | 2.27 | 25/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 19 | 28.4 | 39 | 58.2 | 9 | 13.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 13 | 54.2 | 9 | 37.5 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 3.7 | Identify policies for specific programs. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 31 | 26.7 | 69 | 59.5 | 16 | 13.8 | 0.059 | 2.27 | 25/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 30 | 42.3 | 36 | 50.7 | 5 | 7.0 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 13 | 54.2 | 9 | 37.5 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 1.1 | Identify responsibilities within public health. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 25 | 21.6 | 79 | 68.1 | 12 | 10.3 | 0.188 | 2.26 | 27/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 22 | 32.8 | 41 | 61.2 | 4 | 6.0 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 10 | 41.7 | 14 | 58.3 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |
| 1.2 | Use basic research designs and methods. | Professionals | 3 | 2 | 5 | 4.2 | 95.8 | 40 | 35.1 | 57 | 50.0 | 17 | 14.9 | 0.860 | 2.26 | 27/70 |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 22 | 31.9 | 35 | 50.7 | 12 | 17.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 11 | 45.8 | 11 | 45.8 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|------|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 4.1 | Interact sensitivity, effectively and professionally. | Professionals | 5 | 4.2 | 0 | 4.2 | 95.8 | 32 | 28.1 | 69 | 60.5 | 13 | 11.4 | 0.701 | 2.26 | 29/70 |
| | | Administrators | 3 | 4.1 | 0 | 4.1 | 95.9 | 24 | 33.8 | 39 | 54.9 | 8 | 11.3 | | | |
| | | Academics | 1 | 4.0 | 0 | 4.0 | 96.0 | 11 | 45.8 | 12 | 50.0 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |
| 1.4 | Assess and define the health status of populations. | Professionals | 2 | 1.7 | 0 | 1.7 | 98.3 | 45 | 38.5 | 53 | 45.3 | 19 | 16.2 | 0.335 | 2.25 | 30/70 |
| | | Administrators | 5 | 6.8 | 0 | 6.8 | 93.2 | 21 | 30.4 | 39 | 56.5 | 9 | 13.0 | | | |
| | | Academics | 1 | 4.0 | 0 | 4.0 | 96.0 | 14 | 58.3 | 8 | 33.3 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 6.5 | Use appropriate channels to disseminate information. | Professionals | 6 | 5.0 | 0 | 5.0 | 95.0 | 39 | 34.5 | 66 | 58.4 | 8 | 7.1 | 0.749 | 2.25 | 30/70 |
| | | Administrators | 5 | 6.8 | 0 | 6.8 | 93.2 | 22 | 31.9 | 40 | 58.0 | 7 | 10.1 | | | |
| | | Academics | 1 | 4.0 | 0 | 4.0 | 96.0 | 12 | 50.0 | 11 | 45.8 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 1.12 | Use computer technology applications. | Professionals | 8 | 6.7 | 0 | 6.7 | 93.3 | 37 | 33.3 | 59 | 53.2 | 15 | 13.5 | 0.411 | 2.24 | 32/70 |
| | | Administrators | 10 | 13.5 | 0 | 13.5 | 86.5 | 17 | 26.6 | 34 | 53.1 | 16 | 20.3 | | | |
| | | Academics | 1 | 4.0 | 0 | 4.0 | 96.0 | 13 | 54.2 | 10 | 41.7 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|---|----------|-----|--------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 5.8 | Promote team learning and organisation learning. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 36 | 31.0 | 68 | 58.6 | 12 | 10.3 | 0.770 | 2.24 | 32/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 23 | 34.3 | 39 | 58.2 | 5 | 7.5 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 13 | 56.5 | 9 | 39.1 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |
| 8.2 | Manage programs without budget constraints. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 37 | 32.5 | 68 | 59.6 | 9 | 7.9 | 0.490 | 2.24 | 32/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 28 | 39.4 | 36 | 50.7 | 7 | 9.9 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 18 | 78.3 | 5 | 21.7 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | |
| 2.10 | Evaluate data. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 41 | 36.0 | 62 | 54.4 | 11 | 9.6 | 0.140 | 2.23 | 35/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 21 | 29.6 | 36 | 50.7 | 14 | 19.7 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 15 | 65.2 | 7 | 30.4 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | |
| 5.10 | Identify issues through strategic planning. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 34 | 29.3 | 74 | 63.8 | 8 | 6.9 | 0.285 | 2.23 | 35/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 27 | 40.3 | 35 | 52.2 | 5 | 7.5 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 12 | 52.2 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|------|----------|------|------|---------------|----|----------------|---|-----------|-------|----------------------|---------------|------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 7.2 | Collaborate with community to promote health. | Professionals | 7 | 5.9 | 0 | 94.1 | 48 | 42.9 | 58 | 51.8 | 6 | 5.4 | 0.234 | 2.23 | 35/70 | |
| | | Administrators | 6 | 8.1 | 0 | 91.9 | 21 | 30.9 | 41 | 60.3 | 6 | 8.8 | | | | |
| | | Academics | 1 | 4.0 | 0 | 96.0 | 14 | 58.3 | 7 | 29.2 | 3 | 12.5 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 3 | 30.0 | 7 | 70.0 | 0 | 0.0 | | | | |
| 7.5 | Identify community resources. | Professionals | 3 | 2.5 | 0 | 97.5 | 34 | 29.3 | 76 | 65.5 | 6 | 5.2 | 0.859 | 2.23 | 35/70 | |
| | | Administrators | 3 | 5.5 | 1 | 94.6 | 20 | 28.6 | 45 | 64.3 | 5 | 7.1 | | | | |
| | | Academics | 0 | 8.0 | 2 | 92.0 | 14 | 60.9 | 7 | 30.4 | 2 | 8.7 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |
| 5.9 | Create key values and shared vision. | Professionals | 4 | 3.4 | 0 | 96.6 | 33 | 28.7 | 73 | 63.5 | 9 | 7.8 | 0.854 | 2.22 | 39/70 | |
| | | Administrators | 5 | 6.8 | 0 | 93.2 | 20 | 29.0 | 42 | 60.9 | 7 | 10.1 | | | | |
| | | Academics | 1 | 8.0 | 1 | 92.0 | 11 | 47.8 | 11 | 47.8 | 1 | 4.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |
| 2.3 | Select and define variables. | Professionals | 5 | 4.2 | 0 | 95.8 | 43 | 37.7 | 63 | 55.3 | 8 | 7.0 | 0.358 | 2.21 | 40/70 | |
| | | Administrators | 7 | 9.5 | 0 | 90.5 | 23 | 34.3 | 35 | 52.2 | 9 | 13.4 | | | | |
| | | Academics | 2 | 8.0 | 0 | 92.0 | 13 | 56.5 | 7 | 30.4 | 3 | 13.0 | | | | |
| | | MOPH | 1 | 10.0 | 0 | 90.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|----------|-------|-----|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | N | N | % | | % | N | % | N | % | N | % | | | X ² |
| 3.1 | Collect, summarise and interpret information. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 40 | 34.5 | 67 | 57.8 | 9 | 7.8 | 0.830 | 2.21 | 40/70 | |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 22 | 31.9 | 40 | 58.0 | 7 | 10.1 | | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 12 | 52.2 | 0 | 0.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | | |
| 2.4 | Use basic research designs and methods. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 45 | 39.1 | 58 | 50.4 | 12 | 10.4 | 0.386 | 2.20 | 42/70 | |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 20 | 29.4 | 41 | 60.3 | 7 | 10.3 | | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 10 | 43.5 | 2 | 8.7 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | | |
| 3.5 | Decide on the appropriate course of action. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 34 | 29.3 | 72 | 62.1 | 10 | 8.6 | 0.159 | 2.19 | 43/70 | |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 27 | 39.7 | 39 | 57.4 | 2 | 2.9 | | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 14 | 60.9 | 8 | 34.8 | 1 | 4.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | | |
| 5.12 | Ensure participation of key stakeholders. | Professionals | 5 | 0 | 5 | 4.2 | 95.8 | 33 | 28.9 | 71 | 62.3 | 10 | 8.8 | 0.255 | 2.19 | 43/70 | |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 24 | 33.8 | 45 | 63.4 | 2 | 2.8 | | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 9 | 37.5 | 14 | 58.3 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core % | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|------|----------|----|--------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 6.3 | Advocate for public health. | Professionals | 5 | 4.2 | 0 | 5 | 95.8 | 27 | 23.7 | 74 | 64.9 | 13 | 11.4 | 0.335 | 2.19 | 43/70 |
| | | Administrators | 4 | 5.4 | 0 | 4 | 94.6 | 21 | 30.0 | 45 | 64.3 | 4 | 5.7 | | | |
| | | Academics | 2 | 8.0 | 0 | 2 | 92.0 | 10 | 43.5 | 12 | 52.2 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 1.11 | Operate a surveillance system. | Professionals | 8 | 6.7 | 0 | 8 | 93.3 | 38 | 34.2 | 64 | 57.7 | 9 | 8.1 | 0.164 | 2.18 | 46/70 |
| | | Administrators | 10 | 16.2 | 2 | 12 | 83.8 | 19 | 30.6 | 32 | 51.6 | 11 | 17.7 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 92.0 | 13 | 56.5 | 9 | 39.1 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 2.8 | Identify relevant and appropriate data. | Professionals | 6 | 6.7 | 2 | 8 | 93.3 | 39 | 35.1 | 67 | 60.4 | 5 | 4.5 | 0.011 | 2.18 | 46/70 |
| | | Administrators | 7 | 9.5 | 0 | 7 | 90.5 | 18 | 26.9 | 37 | 55.2 | 12 | 17.9 | | | |
| | | Academics | 2 | 8.0 | 0 | 2 | 92.0 | 14 | 60.9 | 7 | 30.4 | 2 | 8.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 5.11 | Use appropriate methods that effect change. | Professionals | 3 | 2.5 | 0 | 3 | 97.5 | 27 | 23.3 | 84 | 72.4 | 5 | 4.3 | 0.054 | 2.18 | 46/70 |
| | | Administrators | 6 | 9.5 | 1 | 7 | 90.5 | 24 | 35.8 | 37 | 55.2 | 6 | 9.0 | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 96.0 | 9 | 37.5 | 12 | 50.0 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN/Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | | |
|------------------------------|--|----------------|------------------|------|----------|---|------|---------------|----|----------------|----|-----------|----|----------------------|---------------|------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 2.12 | Obtain and interpret community risks and benefits. | Professionals | 4 | 4.2 | 1 | 5 | 4.2 | 95.8 | 35 | 30.7 | 70 | 61.4 | 9 | 7.9 | 0.897 | 2.17 | 49/70 |
| | | Administrators | 5 | 6.8 | 0 | 5 | 6.8 | 93.2 | 19 | 27.5 | 44 | 63.8 | 6 | 8.7 | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 4.0 | 96.0 | 15 | 62.5 | 7 | 29.2 | 2 | 8.3 | | | |
| | | MOPH | 1 | 10.0 | 0 | 1 | 10.0 | 90.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | | | |
| 2.5 | Partner with communities. | Professionals | 4 | 5.1 | 2 | 6 | 5.1 | 95.0 | 37 | 32.7 | 67 | 59.3 | 9 | 8.0 | 0.817 | 2.16 | 50/70 |
| | | Administrators | 7 | 10.9 | 1 | 8 | 10.9 | 89.2 | 20 | 30.3 | 39 | 59.1 | 7 | 10.6 | | | |
| | | Academics | 1 | 4.0 | 0 | 1 | 4.0 | 96.0 | 11 | 45.8 | 10 | 41.7 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | Professionals | 3 | 2.5 | 0 | 3 | 2.5 | 97.5 | 47 | 40.5 | 58 | 50.0 | 11 | 9.5 | 0.878 | 2.16 | 50/70 |
| | | Administrators | 8 | 12.2 | 1 | 9 | 12.2 | 87.8 | 24 | 36.9 | 35 | 53.8 | 6 | 9.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 8.0 | 92.0 | 9 | 39.1 | 13 | 56.5 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 5.6 | Apply theory of organisation. | Professionals | 4 | 3.4 | 0 | 4 | 3.4 | 96.6 | 33 | 28.7 | 72 | 62.6 | 10 | 8.7 | 0.778 | 2.16 | 50/70 |
| | | Administrators | 6 | 8.1 | 0 | 6 | 8.1 | 91.9 | 22 | 32.4 | 39 | 57.4 | 7 | 10.3 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 8.0 | 92.0 | 10 | 43.5 | 12 | 52.2 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|----------------|----|-----------|----|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 1.9 | Use public health information packages. | Professionals | 6 | 1 | 7 | 5.8 | 94.1 | 39 | 34.8 | 53 | 47.3 | 20 | 17.9 | 0.856 | 2.15 | 53/70 |
| | | Administrators | 9 | 4 | 13 | 17.6 | 82.4 | 20 | 32.8 | 28 | 45.9 | 13 | 21.3 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 9 | 37.5 | 13 | 54.2 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 5.7 | Contribute to organisational performance standards. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 34 | 29.3 | 71 | 61.2 | 11 | 9.5 | 0.738 | 2.15 | 53/70 |
| | | Administrators | 8 | 0 | 8 | 10.8 | 89.2 | 23 | 34.8 | 37 | 56.1 | 6 | 9.1 | | | |
| | | Academics | 2 | 0 | 2 | 8.0 | 92.0 | 10 | 43.5 | 11 | 47.8 | 2 | 8.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 7 | 70.0 | 0 | 0.0 | | | |
| 4.3 | Adapt problem solving to fit cultural differences. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 29 | 25.4 | 74 | 64.9 | 11 | 9.6 | 0.445 | 2.14 | 56/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 14 | 20.6 | 50 | 73.5 | 4 | 5.9 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 8 | 33.3 | 14 | 58.3 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |
| 5.13 | Create a culture of ethical standards. | Professionals | 5 | 0 | 5 | 4.2 | 95.8 | 24 | 21.1 | 78 | 68.4 | 12 | 10.5 | 0.683 | 2.14 | 56/70 |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 18 | 26.1 | 43 | 62.3 | 8 | 11.6 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 8 | 33.3 | 14 | 58.3 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | Weighted Mean | | | | |
|------------------------------|---------------------------|----------------|------------------|------|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|-------|----------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² | |
| 1.13 | Apply ethical conduct. | Professionals | 7 | 6.7 | 1 | 6.7 | 8 | 6.7 | 93.3 | 34 | 30.6 | 65 | 58.6 | 12 | 10.8 | 0.595 | 2.12 | 58/70 |
| | | Administrators | 7 | 9.5 | 0 | 9.5 | 7 | 9.5 | 90.5 | 16 | 23.9 | 42 | 62.7 | 9 | 13.4 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 13 | 56.5 | 8 | 34.8 | 2 | 8.7 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 2.9 | Apply ethical principles. | Professionals | 4 | 4.2 | 1 | 4.2 | 5 | 4.2 | 95.8 | 36 | 31.6 | 69 | 60.5 | 9 | 7.9 | 0.191 | 2.12 | 58/70 |
| | | Administrators | 6 | 8.1 | 0 | 8.1 | 6 | 8.1 | 91.9 | 17 | 25.0 | 40 | 58.8 | 11 | 16.2 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 9 | 39.1 | 13 | 56.5 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 1.8 | Apply risk assessment. | Professionals | 5 | 4.2 | 0 | 4.2 | 5 | 4.2 | 95.8 | 26 | 22.8 | 65 | 57.0 | 23 | 20.2 | 0.105 | 2.09 | 60/70 |
| | | Administrators | 6 | 9.5 | 1 | 9.5 | 7 | 9.5 | 90.5 | 23 | 34.3 | 37 | 55.2 | 7 | 10.4 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 9 | 39.1 | 13 | 56.5 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 2 | 20.0 | 2 | 20.0 | | | |
| 1.5 | Apply critical thinking. | Professionals | 3 | 2.5 | 0 | 2.5 | 3 | 2.5 | 97.5 | 31 | 26.7 | 62 | 53.4 | 23 | 19.8 | 0.891 | 2.08 | 61/70 |
| | | Administrators | 7 | 12.2 | 2 | 12.2 | 9 | 12.2 | 87.8 | 18 | 27.7 | 36 | 55.4 | 11 | 16.9 | | | |
| | | Academics | 1 | 8.0 | 1 | 8.0 | 2 | 8.0 | 92.0 | 15 | 65.2 | 6 | 26.1 | 2 | 8.7 | | | |
| | | MOPH | 1 | 10.0 | 0 | 10.0 | 1 | 10.0 | 90.0 | 5 | 55.6 | 4 | 44.4 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN/Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 1.10 | Design a surveillance system. | Professionals | 6 | 1 | 7 | 5.8 | 94.1 | 40 | 35.7 | 57 | 50.9 | 15 | 13.4 | 0.445 | 2.07 | 62/70 |
| | | Administrators | 8 | 3 | 11 | 15.9 | 85.1 | 17 | 27.0 | 38 | 60.3 | 8 | 12.7 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 11 | 47.8 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 2.6 | Use appropriate data collection. | Professionals | 5 | 3 | 8 | 6.7 | 93.3 | 46 | 41.4 | 56 | 50.5 | 9 | 8.1 | 0.004* | 2.06 | 63/70 |
| | | Administrators | 6 | 2 | 8 | 10.8 | 89.2 | 16 | 24.2 | 34 | 51.5 | 16 | 24.2 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 11 | 47.8 | 11 | 47.8 | 1 | 10.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 2.11 | Illuminate issues from data. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 30 | 26.3 | 67 | 58.8 | 17 | 14.9 | 0.607 | 2.05 | 64/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 15 | 22.1 | 45 | 66.2 | 8 | 11.8 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 7 | 30.4 | 15 | 65.2 | 1 | 4.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 3 | 30.0 | 2 | 20.0 | | | |
| 3.3 | Articulate implications of policy options. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 27 | 23.3 | 67 | 57.8 | 22 | 19.0 | 0.222 | 2.05 | 64/70 |
| | | Administrators | 3 | 0 | 3 | 4.1 | 95.9 | 23 | 32.4 | 40 | 56.3 | 8 | 11.3 | | | |
| | | Academics | 1 | 1 | 2 | 8.0 | 92.0 | 9 | 39.1 | 14 | 60.9 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 8 | 80.0 | 1 | 10.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|----------------|----|-----------|----|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 4.2 | Identify the role of cultural factors service delivery. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 26 | 22.8 | 74 | 64.9 | 14 | 12.3 | 0.573 | 2.04 | 67/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 16 | 23.5 | 47 | 69.1 | 5 | 7.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 7 | 29.2 | 15 | 62.5 | 2 | 8.3 | | | |
| | | MOPH | 1 | 0 | 1 | 10.0 | 90.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | | | |
| B | Suggested Core Skills | | | | | | | | | | | | | | | |
| 1.3 | Apply basic public health sciences. | Professionals | 4 | 2 | 6 | 5.1 | 95.0 | 47 | 41.6 | 51 | 45.1 | 15 | 13.3 | 0.337 | 2.15 | 53/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 22 | 31.4 | 39 | 55.7 | 9 | 12.9 | | | |
| | | Academics | 2 | 1 | 3 | 12.0 | 88.0 | 13 | 59.1 | 8 | 36.4 | 1 | 4.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 7 | 70.0 | 0 | 0.0 | | | |
| 1.7 | Identify limitations of research. | Professionals | 3 | 2 | 5 | 4.2 | 95.8 | 36 | 31.6 | 52 | 45.6 | 26 | 22.8 | 0.859 | 2.05 | 64/70 |
| | | Administrators | 8 | 1 | 9 | 12.2 | 87.8 | 18 | 27.7 | 31 | 47.7 | 16 | 24.6 | | | |
| | | Academics | 2 | 1 | 3 | 12.0 | 88.0 | 8 | 36.4 | 13 | 59.1 | 1 | 4.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |
| 3.2 | State policy options. | Professionals | 3 | 0 | 3 | 2.5 | 97.5 | 27 | 23.3 | 77 | 66.4 | 12 | 10.3 | 0.186 | 2.04 | 67/70 |
| | | Administrators | 4 | 0 | 4 | 5.4 | 94.6 | 23 | 32.9 | 37 | 52.9 | 10 | 14.3 | | | |
| | | Academics | 2 | 1 | 3 | 12.0 | 88.0 | 8 | 36.4 | 13 | 59.1 | 1 | 4.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 1 | 10.0 | 9 | 90.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

Table-5.32: Suggested Public Health Skills for Mid-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | | |
|------------------------------|--|----------------|------------------|------|----------|------|------|---------------|----|----------------|----|-----------|----|----------------------|---------------|------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁴ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 3.4 | State the expected outcome of policy options. | Professionals | 3 | 3.3 | 1 | 3.3 | 4 | 96.6 | 23 | 20.0 | 80 | 69.6 | 12 | 10.4 | 0.146 | 1.98 | 69/70 |
| | | Administrators | 4 | 5.4 | 0 | 5.4 | 4 | 94.6 | 23 | 32.9 | 41 | 58.6 | 6 | 8.6 | | | |
| | | Academics | 2 | 12.0 | 1 | 12.0 | 3 | 88.0 | 7 | 31.8 | 14 | 63.6 | 1 | 4.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0.0 | 9 | 90.0 | 1 | 10.0 | | | |
| 1.6 | Identify and access current scientific evidence. | Professionals | 6 | 5.0 | 0 | 5.0 | 6 | 95.0 | 37 | 32.7 | 54 | 47.8 | 22 | 19.5 | 0.610 | 1.96 | 70/70 |
| | | Administrators | 6 | 9.5 | 1 | 9.5 | 7 | 90.5 | 18 | 26.9 | 37 | 55.2 | 12 | 17.9 | | | |
| | | Academics | 3 | 16.0 | 1 | 16.0 | 4 | 84.0 | 11 | 52.4 | 9 | 42.9 | 1 | 4.8 | | | |
| | | MOPH | 2 | 20.0 | 0 | 20.0 | 2 | 80.0 | 4 | 50.0 | 4 | 50.0 | 0 | 0.0 | | | |

⁴ p value <0.01 indicated with *

4) Level of Mastery in Public Health Skills required for Top-level Management Staff

(a) Not Core Skills

None of the 70 Skills was considered by all Constituencies as Not to be a Core Skill for Top-level Management Staff.

(b) Core Skills

Based upon Table-5.21, 65 of the 70 Skills were considered to be a Core Skill by 3 or 4 of the Constituencies and 5 Skills were considered Not to be a Core Skill by 2-3 of the Constituencies. This latter group required further study; which is the subject of Section 5.6. The discussion, which follows, deals with those Skills that are considered to be Core Skills.

In reviewing the Levels of Mastery required for each of the Core Skills, respondents expected Top-level Staff to be Proficient or Knowledgeable. Any Constituency did not consider the Level of Awareness for any of the 70 Skills. There were differences by constituency whether the Level of Mastery required for Core Skills should be at the Level of Proficiency or the Level of Knowledgeable. The criterion used in identifying Skills per Level of Mastery and for each Constituency was a Frequency of $\geq 50\%$.

Of the 65 Skills considered by Constituencies to be a Core Skill, the Level of Mastery expected by Professionals was Proficiency for 39 Skills. Administrators expected Proficiency for 19 Skills only. While compared with Professionals and Administrators, Academics and MOPH representatives (Table-5.37) expected Proficiency for 51 and 46 Skills respectively. Table-5.33 shows those Skills for which two or more Constituencies expected Proficiency as the required Level of Mastery.

Table-5.33: Skills Considered being Core Skills for Top-level Management Staff, Requiring Proficiency by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|--|---------------|----------------|-----------|------|
| 1. | Basic Public Health Skills | | | | |
| 1.1 | Identify responsibilities within public health. | 56.9 | 55.1 | 64.0 | 70.0 |
| 1.4 | Assess and define the health status of populations. | 40.9 | 43.3 | 58.3 | 50.0 |
| 1.5 | Apply critical thinking. | 48.2 | 40.3 | 79.2 | 90.0 |
| 2. | Analytical Skills | | | | |
| 2.1 | Define a problem. | 58.3 | 44.6 | 72.0 | 77.8 |
| 2.2 | Determine appropriate use and limitations of data. | 54.9 | 34.9 | 54.2 | 70.0 |
| 2.7 | Make relevant inferences from data. | 31.8 | 32.8 | 60.0 | 50.0 |
| 2.11 | Illuminate issues from data. | 44.2 | 37.9 | 50.0 | 60.0 |
| 3. | Policy Development Skills | | | | |
| 3.1 | Collect, summarise and interpret information. | 54.0 | 44.8 | 84.0 | 80.0 |
| 3.2 | State policy options. | 69.3 | 65.2 | 91.7 | 80.0 |
| 3.3 | Articulate implications of policy options. | 62.3 | 61.8 | 87.5 | 90.0 |
| 3.4 | State the expected outcome of policy options. | 59.8 | 57.4 | 83.3 | 90.0 |
| 3.5 | Decide on the appropriate course of action. | 67.9 | 62.1 | 88.0 | 70.0 |
| 3.6 | Utilise current techniques in analysis and planning. | 56.6 | 45.6 | 91.7 | 70.0 |
| 3.7 | Identify policies for specific programs. | 57.5 | 58.8 | 84.0 | 50.0 |
| 5. | Strategic Management Skill | | | | |
| 5.1 | Prepare and implement emergency plans. | 61.1 | 51.5 | 87.5 | 80.0 |
| 5.2 | Develop plans. | 58.0 | 49.2 | 80.0 | 80.0 |
| 5.3 | Translate policy into organisational plans. | 61.1 | 56.9 | 80.0 | 70.0 |
| 5.4 | Monitor and evaluate programs. | 63.2 | 50.8 | 60.0 | 80.0 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 62.6 | 58.5 | 64.0 | 70.0 |
| 5.6 | Apply theory of organisation. | 57.5 | 49.2 | 56.0 | 60.0 |
| 5.7 | Contribute to organisational performance standards. | 60.5 | 56.0 | 62.5 | 80.0 |
| 5.8 | Promote team learning and organisation learning. | 53.5 | 44.4 | 66.7 | 70.0 |
| 5.9 | Create key values and shared vision. | 64.9 | 45.3 | 66.7 | 90.0 |
| 5.10 | Identify issues through strategic planning. | 59.6 | 41.3 | 80.0 | 90.0 |
| 5.11 | Use appropriate methods that effect change. | 58.8 | 43.1 | 60.0 | 60.0 |
| 5.12 | Ensure participation of key stakeholders. | 52.7 | 44.8 | 56.0 | 33.3 |
| 5.13 | Create a culture of ethical standards. | 44.1 | 32.8 | 60.0 | 50.0 |
| 6. | Communication Skills | | | | |
| 6.1 | Communicate effectively. | 50.4 | 48.5 | 84.0 | 80.0 |
| 6.2 | Solicit input from individuals and organisations. | 54.5 | 55.9 | 80.0 | 80.0 |
| 6.3 | Advocate for public health. | 62.5 | 56.7 | 91.7 | 70.0 |
| 6.4 | Lead and participate in-groups. | 61.3 | 47.8 | 88.0 | 70.0 |
| 6.6 | Listen to others in an unbiased manner. | 61.1 | 48.5 | 83.3 | 70.0 |
| 6.7 | Make accurate and effective presentations. | 54.9 | 43.3 | 84.0 | 80.0 |
| 7. | Partnership Skills | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 61.3 | 45.5 | 68.0 | 60.0 |
| 7.3 | Mobilise organisations within the community. | 53.1 | 54.4 | 64.0 | 40.0 |
| 7.4 | Use management skills to build partnerships. | 74.8 | 54.4 | 79.2 | 60.0 |

Table-5.33: Skills Considered being Core Skills for Top-level Management Staff, Requiring Proficiency by Two or More Constituencies (Cont.)

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|---|---------------|----------------|-----------|------|
| 8. | Operational Management Skills | | | | |
| 8.1 | Develop and present a budget. | 54.4 | 50.7 | 84.0 | 40.0 |
| 8.2 | Manage programs without budget constraints. | 50.0 | 44.1 | 79.2 | 50.0 |
| 8.3 | Apply budget processes. | 51.8 | 44.1 | 80.0 | 66.7 |
| 8.4 | Determine budget priorities. | 64.6 | 55.2 | 84.0 | 60.0 |
| 8.5 | Monitor program performance. | 61.1 | 53.7 | 84.0 | 80.0 |
| 8.6 | Develop proposals for funding. | 55.5 | 49.2 | 80.0 | 80.0 |
| 8.7 | Apply basic human relation skills. | 63.7 | 50.7 | 84.0 | 70.0 |
| 8.9 | Apply ethical conduct. | 56.6 | 52.9 | 72.0 | 60.0 |

Of the 65 Skills considered by Constituencies to be a Core Skill, the Level of Mastery expected by Professionals was Knowledgeable for 15 Skills. Administrators and MOPH representatives expected Top-level Management Staff being Knowledgeable for 13 Skills. As shown in Table-5.37, in strong contrast with Professionals, Administrators and MOPH representatives, Academics expected Top-level Staff being Knowledgeable for 4 Skills only. Table-5.34 shows those Skills for which two or more Constituencies agreed on Knowledgeable as the required Level of Mastery.

Table-5.34: Skills Considered being Core Skills for Top-level Management Staff, Requiring being Knowledgeable by Two or More Constituencies

| SN | Competency Domain & Skills | Professionals | Administrators | Academics | MOPH |
|-----------|---|---------------|----------------|-----------|------|
| 1. | Basic Public Health Skills | | | | |
| 1.9 | Use public health information packages. | 59.5 | 41.8 | 44.0 | 60.0 |
| 1.12 | Use computer applications. | 59.1 | 53.3 | 60.0 | 50.0 |
| 1.13 | Apply ethical conduct. | 60.4 | 51.6 | 41.7 | 50.0 |
| 2. | Analytical Skills | | | | |
| 2.5 | Partner with communities. | 53.3 | 50.8 | 47.8 | 40.0 |
| 2.8 | Identify relevant and appropriate data. | 53.2 | 43.8 | 28.0 | 50.0 |
| 2.9 | Apply ethical principles. | 45.9 | 44.6 | 54.2 | 56.6 |
| 2.10 | Evaluate data. | 53.6 | 50.8 | 41.7 | 33.3 |
| 4 | Social Skills | | | | |
| 4.2 | Identify the role of cultural factors service delivery. | 59.8 | 63.1 | 52.0 | 44.4 |
| 4.3 | Adapt problem solving to fit cultural differences. | 51.8 | 60.6 | 32.0 | 60.0 |
| 6. | Communication Skills | | | | |
| 6.5 | Use appropriate channels disseminate information. | 57.7 | 55.2 | 44.0 | 40.0 |
| 7. | Partnership Skills | | | | |
| 7.5 | Identify community resources. | 52.2 | 44.1 | 52.2 | 60.0 |

Tables 5.35 and 5.36 summarise the numbers of Skills, per Competency Domain, for each Level of Mastery by Constituency as follows:

Table-5.35: The Number of Skills for Top-level Management Staff for which the Level of Mastery should be at the Level of Proficiency by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|--------------|---------------|----------------|----------|-----------|
| Basic Public Health Skills | 13 | 1 | 1 | 4 | 6 |
| Analytical Skills | 12 | 2 | 0 | 8 | 5 |
| Policy Development Skills | 7 | 7 | 4 | 7 | 7 |
| Social Skills | 3 | 0 | 0 | 1 | 0 |
| Strategic Management Skills | 13 | 12 | 5 | 13 | 12 |
| Communication Skills | 7 | 6 | 2 | 6 | 6 |
| Partnership Skills | 6 | 3 | 2 | 3 | 3 |
| Operational Management Skills | 9 | 8 | 5 | 9 | 7 |

Table-5.36: The Number of Skills for Top-level Management Staff for which the Level of Mastery should be at the Level of Knowledgeable by Constituency

| Competency Domain | Total Skills | Professionals | Administrators | Academia | MOPH Rep. |
|-------------------------------|--------------|---------------|----------------|----------|-----------|
| Basic Public Health Skills | 13 | 5 | 2 | 1 | 5 |
| Analytical Skills | 12 | 5 | 3 | 1 | 2 |
| Policy Development Skills | 7 | 0 | 0 | 0 | 1 |
| Social Skills | 3 | 3 | 2 | 1 | 1 |
| Strategic Management Skills | 13 | 0 | 4 | 0 | 0 |
| Communication Skills | 7 | 1 | 1 | 0 | 0 |
| Partnership Skills | 6 | 1 | 1 | 1 | 3 |
| Operational Management Skills | 9 | 0 | 0 | 0 | 1 |

(c) Comparisons between Professionals and Administrators

Also for Top-level Management Staff, the responses of the two largest Constituencies, Professionals (119) and Administrators (74) were compared using the Chi-square test and the results are shown in Table-5.37. Only one of these comparisons was statistically significant at $p < 0.01$, namely:

| Competency Domain | Skill # | Skill Description | P value |
|----------------------|---------|--|---------|
| 2. Analytical Skills | 2 | Determine appropriate use and limitations of data. | 0.007 |

(d) Weighted Means and Ranking

Determining the Weighted-Mean and ranking for each of the 70 Skills as shown in Table-5.37 further summarised data; the schema applied to arrive at the Weighted-Mean, the range and classification of the Mean, was the same as for other levels of staff and explained under A.2.3 (b) point-4 of Front-line Staff. Based upon the Weighted-Mean, the 70 Skills were, then, ranked from high to low.

As shown below, the congruence between these scores and the previous determination as whether a Skill was Core vs. Not-Core and for Core Skills the Level of Mastery was reasonable.

| Skills considered being | # Skills | Range of weighted-mean | Range of Ranking |
|-------------------------|----------|------------------------|------------------|
| Not Core Skills | 0 | - | - |
| Suggested Core Skills | 5 | 2.04-1.32 | 59-70 |
| Core Skills | 41 | 2.62-1.65 | 1-69 |

Table-5.37: Suggested Public Health Skills for Top-level Management Staff

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|----------|-------|-----|------|---------------|----------------|----|-----------|---|----------------------|-------|---------------|------|
| | | | Missing | Not Core | Total | | | Proficiency | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | | | N | % | | | N | % | N | % | | | | N |
| A | Core Skills | | | | | | | | | | | | | | | |
| 3.2 | State policy options. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 79 | 69.3 | 31 | 27.2 | 4 | 3.5 | 0.515 | 2.62 | 1/70 |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 45 | 65.2 | 19 | 27.5 | 5 | 7.2 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 22 | 91.7 | 1 | 4.2 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 3.3 | Articulate implications of policy options. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 71 | 62.3 | 37 | 32.5 | 6 | 5.3 | 0.957 | 2.59 | 2/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 42 | 61.8 | 23 | 33.8 | 3 | 4.4 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 21 | 87.5 | 3 | 12.5 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | |
| 3.4 | State the expected outcome of policy options. | Professionals | 6 | 1 | 7 | 5.8 | 94.1 | 67 | 59.8 | 40 | 35.7 | 5 | 4.5 | 0.943 | 2.58 | 3/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 39 | 57.4 | 26 | 38.2 | 3 | 4.4 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 20 | 83.3 | 4 | 16.7 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | |
| 8.5 | Monitor program performance. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 69 | 61.1 | 39 | 34.5 | 5 | 4.4 | 0.522 | 2.57 | 4/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 36 | 53.7 | 26 | 38.8 | 5 | 7.5 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|--|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | |
| 3.5 | Decide on the appropriate course of action. | Professionals | 5 | 2 | 7 | 5.9 | 94.1 | 76 | 67.9 | 33 | 29.5 | 3 | 2.7 | 0.584 | 2.55 | 5/70 | |
| | | Administrators | 8 | 0 | 8 | 10.8 | 89.2 | 41 | 62.1 | 24 | 36.4 | 1 | 1.5 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 22 | 88.0 | 2 | 8.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | | |
| 6.2 | Solicit input from individuals and organisations. | Professionals | 7 | 0 | 7 | 5.9 | 94.1 | 61 | 54.5 | 44 | 39.3 | 7 | 6.3 | 0.982 | 2.55 | 5/70 | |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 38 | 55.9 | 26 | 38.2 | 4 | 5.9 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 20 | 80.0 | 4 | 16.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | | |
| 6.3 | Advocate for public health. | Professionals | 7 | 0 | 7 | 5.9 | 94.1 | 70 | 62.5 | 39 | 34.8 | 3 | 2.7 | 0.594 | 2.55 | 5/70 | |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 38 | 56.7 | 28 | 41.8 | 1 | 1.5 | | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 22 | 91.7 | 1 | 4.2 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | | |
| 6.1 | Communicate effectively. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 57 | 50.4 | 52 | 46.0 | 4 | 3.5 | 0.520 | 2.54 | 8/70 | |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 33 | 48.5 | 30 | 44.1 | 5 | 7.4 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|----------|-------|-----|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | N | N | % | | % | N | % | N | % | N | % | | |
| 8.7 | Apply basic human relation skills. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 72 | 63.7 | 34 | 30.1 | 7 | 6.2 | 0.077 | 2.53 | 9/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 34 | 50.7 | 31 | 46.3 | 2 | 3.0 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 8.4 | Determine budget priorities. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 73 | 64.6 | 36 | 31.9 | 4 | 3.5 | 0.416 | 2.52 | 10/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 37 | 55.2 | 26 | 38.8 | 4 | 6.0 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |
| 3.1 | Collect, summarise and interpret information. | Professionals | 4 | 2 | 6 | 5.1 | 95.0 | 61 | 54.0 | 46 | 40.7 | 6 | 5.3 | 0.132 | 2.51 | 11/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 30 | 44.8 | 28 | 41.8 | 9 | 13.4 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 4 | 16.0 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 7.4 | Use management skills to build partnerships. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 86 | 74.8 | 25 | 21.7 | 4 | 3.5 | 0.015 | 2.51 | 11/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 37 | 54.4 | 25 | 36.8 | 6 | 8.8 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 19 | 79.2 | 5 | 20.8 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 72 | 62.6 | 34 | 29.6 | 9 | 7.8 | 0.266 | 2.50 | 13/70 |
| | | Administrators | 9 | 0 | 9 | 12.2 | 87.8 | 38 | 58.5 | 25 | 38.5 | 2 | 3.1 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 16 | 64.0 | 8 | 32.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 5.10 | Identify issues through strategic planning. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 68 | 59.6 | 38 | 33.3 | 8 | 7.0 | 0.056 | 2.50 | 13/70 |
| | | Administrators | 10 | 1 | 11 | 14.9 | 85.1 | 26 | 41.3 | 32 | 50.8 | 5 | 7.9 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 20 | 80.0 | 4 | 16.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | |
| 6.7 | Make accurate and effective presentations. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 62 | 54.9 | 44 | 38.9 | 7 | 6.2 | 0.209 | 2.50 | 13/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 29 | 43.3 | 30 | 44.8 | 8 | 11.9 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 3.7 | Identify policies for specific programs. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 65 | 57.5 | 45 | 39.8 | 3 | 2.7 | 0.281 | 2.49 | 16/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 40 | 58.8 | 23 | 33.8 | 5 | 7.4 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|----------|-------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | N | N | % | | % | N | % | N | % | N | % | | |
| 5.1 | Prepare and implement emergency plans. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 69 | 61.1 | 39 | 34.5 | 5 | 4.4 | 0.205 | 2.49 | 16/70 |
| | | Administrators | 8 | 0 | 8 | 10.8 | 89.2 | 34 | 51.5 | 25 | 37.9 | 7 | 10.6 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 21 | 87.5 | 2 | 8.3 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 90.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 6.4 | Lead and participate in-groups. | Professionals | 7 | 1 | 8 | 6.7 | 93.3 | 68 | 61.3 | 36 | 32.4 | 7 | 6.3 | 0.175 | 2.48 | 18/70 |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 32 | 47.8 | 31 | 46.3 | 4 | 6.0 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 22 | 88.0 | 1 | 4.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |
| 5.4 | Monitor and evaluate programs. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 72 | 63.2 | 38 | 33.3 | 4 | 3.5 | 0.049 | 2.47 | 19/70 |
| | | Administrators | 8 | 1 | 9 | 12.2 | 87.8 | 33 | 50.8 | 24 | 36.9 | 8 | 12.3 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 15 | 60.0 | 9 | 36.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 6.6 | Listen to others in an unbiased manner. | Professionals | 6 | 0 | 6 | 5.0 | 95.0 | 69 | 61.1 | 41 | 36.6 | 3 | 2.7 | 0.029 | 2.47 | 19/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 33 | 48.5 | 27 | 39.7 | 8 | 11.8 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 20 | 83.3 | 3 | 12.5 | 1 | 4.2 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | | | |
|------------------------------|---|----------------|------------------|------|----------|------|------|---------------|-------------|----|----------------|----|-----------|----|----------------------|-------|------|-------|
| | | | Missing | | Not Core | | | % | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | N | % | | | | |
| 5.3 | Translate policy into organisational plans. | Professionals | 5 | 5.0 | 1 | 5.0 | 6 | 5.0 | 95.0 | 63 | 61.1 | 41 | 36.3 | 3 | 2.7 | 0.035 | 2.46 | 21/70 |
| | | Administrators | 8 | 12.2 | 1 | 12.2 | 9 | 12.2 | 87.8 | 37 | 56.9 | 20 | 30.8 | 8 | 12.3 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 20 | 80.0 | 4 | 16.0 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 5.7 | Contribute to organisational performance standards. | Professionals | 4 | 4.2 | 1 | 4.2 | 5 | 4.2 | 95.8 | 69 | 60.5 | 36 | 31.6 | 9 | 7.9 | 0.872 | 2.46 | 21/70 |
| | | Administrators | 9 | 12.2 | 0 | 12.2 | 9 | 12.2 | 87.8 | 37 | 56.9 | 23 | 35.4 | 5 | 7.7 | | | |
| | | Academics | 1 | 4.0 | 0 | 4.0 | 1 | 4.0 | 96.0 | 15 | 42.5 | 7 | 29.2 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 8.6 | Develop proposals for funding. | Professionals | 7 | 7.6 | 2 | 7.6 | 9 | 7.6 | 92.4 | 61 | 55.5 | 40 | 36.4 | 9 | 8.2 | 0.728 | 2.46 | 21/70 |
| | | Administrators | 7 | 12.2 | 2 | 12.2 | 9 | 12.2 | 87.8 | 32 | 49.2 | 27 | 41.5 | 6 | 9.2 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 20 | 80.0 | 4 | 16.4 | 1 | 4.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |
| 1.1 | Identify responsibilities within public health | Professionals | 2 | 2.5 | 1 | 2.5 | 3 | 2.5 | 97.5 | 66 | 56.9 | 35 | 30.2 | 15 | 12.9 | 0.528 | 2.45 | 24/70 |
| | | Administrators | 5 | 6.8 | 0 | 6.8 | 5 | 6.8 | 93.2 | 38 | 55.1 | 18 | 26.1 | 12 | 18.8 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 16 | 64.0 | 9 | 36.0 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|---|----------|------|------|---------------|-------------|----|----------------|---|-----------|-------|----------------------|---------------|------|
| | | | Missing | | Not Core | | | % | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | % | N | % | | | N | % | N | % | N | % | | | |
| 8.9 | Apply ethical conduct. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 64 | 56.6 | 44 | 38.9 | 5 | 4.4 | 0.844 | 2.44 | 25/70 | |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 36 | 52.9 | 28 | 41.2 | 4 | 5.9 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 18 | 72.0 | 6 | 24.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | | |
| 3.6 | Utilise current techniques in analysis and planning. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 64 | 56.6 | 44 | 38.9 | 5 | 4.4 | 0.176 | 2.43 | 26/70 | |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 31 | 45.6 | 30 | 44.1 | 7 | 10.3 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 22 | 91.7 | 1 | 4.2 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 2 | 20.0 | 1 | 10.0 | | | | |
| 5.9 | Create key values and shared vision. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 74 | 64.9 | 33 | 28.9 | 7 | 6.1 | 0.040 | 2.43 | 26/70 | |
| | | Administrators | 8 | 2 | 10 | 13.5 | 86.5 | 29 | 45.3 | 29 | 45.3 | 6 | 9.4 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 16 | 66.7 | 7 | 29.2 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | | |
| 7.1 | Maintain linkages with key stakeholders. | Professionals | 8 | 0 | 8 | 6.7 | 93.3 | 68 | 61.3 | 37 | 33.3 | 6 | 5.4 | 0.114 | 2.43 | 26/70 | |
| | | Administrators | 7 | 1 | 8 | 10.9 | 89.2 | 30 | 45.5 | 32 | 48.5 | 4 | 6.1 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 17 | 68.0 | 7 | 28.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 4 | 40.0 | 0 | 0.0 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|------|----------|------|------|---------------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 8.1 | Develop and present a budget. | Professionals | 5 | 4.2 | 0 | 95.8 | 62 | 54.4 | 42 | 36.8 | 10 | 8.8 | 0.872 | 2.40 | 29/70 | |
| | | Administrators | 6 | 9.5 | 1 | 90.5 | 34 | 50.7 | 26 | 38.8 | 7 | 10.4 | | | | |
| | | Academics | 0 | 0 | 0 | 100 | 21 | 84.0 | 3 | 12.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 4 | 100.0 | 5 | 50.0 | 1 | 10.0 | | | | |
| 5.11 | Use appropriate methods that effect change. | Professionals | 4 | 4.2 | 1 | 95.8 | 67 | 58.8 | 41 | 36.0 | 6 | 5.3 | 0.124 | 2.39 | 30/70 | |
| | | Administrators | 8 | 9.5 | 1 | 87.8 | 28 | 43.1 | 33 | 50.8 | 4 | 6.2 | | | | |
| | | Academics | 0 | 0 | 0 | 100 | 15 | 60.0 | 8 | 32.0 | 2 | 8.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 6 | 50.0 | 4 | 40.0 | 0 | 0.0 | | | | |
| 8.3 | Apply budget processes. | Professionals | 6 | 5.8 | 1 | 94.1 | 58 | 51.8 | 47 | 42.0 | 7 | 6.3 | 0.466 | 2.39 | 30/70 | |
| | | Administrators | 6 | 8.1 | 0 | 91.9 | 30 | 44.1 | 31 | 45.6 | 7 | 10.3 | | | | |
| | | Academics | 0 | 0 | 0 | 100 | 20 | 80.0 | 3 | 12.0 | 2 | 8.0 | | | | |
| | | MOPH | 1 | 10.0 | 0 | 90.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | | | | |
| 7.3 | Mobilise organisations within the community. | Professionals | 6 | 5.0 | 0 | 95.0 | 60 | 53.1 | 46 | 40.7 | 7 | 6.2 | 0.578 | 2.37 | 32/70 | |
| | | Administrators | 6 | 8.1 | 0 | 91.9 | 37 | 54.4 | 25 | 36.8 | 6 | 8.8 | | | | |
| | | Academics | 0 | 0 | 0 | 100 | 16 | 64.0 | 7 | 28.0 | 2 | 8.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|------|----------|------|------|---------------|----|----------------|----|-----------|----|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 1.5 | Apply critical thinking. | Professionals | 3 | 4.2 | 2 | 16.3 | 5 | 95.8 | 55 | 48.2 | 45 | 39.5 | 14 | 12.3 | 0.584 | 2.34 | 33/70 |
| | | Administrators | 9 | 16.3 | 3 | 83.8 | 12 | 83.8 | 25 | 40.3 | 29 | 46.8 | 8 | 12.9 | | | |
| | | Academics | 0 | 4.0 | 1 | 96.0 | 1 | 96.0 | 19 | 79.2 | 3 | 12.5 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 0 | 100 | 9 | 90.0 | 1 | 10.0 | 0 | 0.0 | | | |
| 5.6 | Apply theory of organisation. | Professionals | 5 | 5.0 | 1 | 14.9 | 6 | 95.0 | 65 | 57.5 | 40 | 35.4 | 8 | 7.1 | 0.496 | 2.34 | 33/70 |
| | | Administrators | 10 | 14.9 | 1 | 85.1 | 11 | 85.1 | 31 | 49.2 | 28 | 44.4 | 4 | 6.3 | | | |
| | | Academics | 0 | 0 | 0 | 100 | 0 | 100 | 14 | 56.0 | 9 | 36.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | |
| 5.8 | Promote team learning and organisation learning. | Professionals | 4 | 4.2 | 1 | 14.9 | 5 | 95.8 | 61 | 53.5 | 41 | 36.0 | 12 | 10.5 | 0.110 | 2.33 | 35/70 |
| | | Administrators | 9 | 14.9 | 2 | 85.1 | 11 | 85.1 | 28 | 44.4 | 32 | 50.8 | 3 | 4.8 | | | |
| | | Academics | 0 | 4.0 | 1 | 96.0 | 1 | 96.0 | 16 | 66.7 | 6 | 25.0 | 2 | 8.3 | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 0 | 100 | 7 | 70.0 | 3 | 30.0 | 0 | 0.0 | | | |
| 5.2 | Develop plans. | Professionals | 7 | 5.9 | 0 | 12.2 | 7 | 94.1 | 35 | 58.0 | 37 | 33.0 | 10 | 8.9 | 0.499 | 2.31 | 36/70 |
| | | Administrators | 8 | 12.2 | 1 | 87.8 | 9 | 87.8 | 32 | 49.2 | 25 | 38.5 | 8 | 12.3 | | | |
| | | Academics | 0 | 0 | 0 | 100 | 0 | 100 | 20 | 90.0 | 5 | 20.0 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 100 | 0 | 100 | 8 | 80.0 | 2 | 20.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|------|---------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledgeable | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 8.2 | Manage programs without budget constraints. | Professionals | 5 | 2 | 7 | 5.9 | 94.1 | 56 | 50.0 | 50 | 44.6 | 6 | 5.4 | 0.280 | 2.31 | 36/70 |
| | | Administrators | 6 | 0 | 6 | 8.1 | 91.9 | 30 | 44.1 | 30 | 44.1 | 8 | 11.8 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 19 | 79.2 | 5 | 20.8 | 0 | 0.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 3 | 30.0 | 2 | 20.0 | | | |
| 1.8 | Apply risk assessment. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 56 | 48.7 | 42 | 36.5 | 17 | 14.8 | 0.583 | 2.30 | 38/70 |
| | | Administrators | 7 | 3 | 10 | 13.6 | 86.5 | 31 | 48.4 | 20 | 31.3 | 13 | 20.3 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 12 | 48.0 | 11 | 44.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 8 | 80.0 | 1 | 10.0 | 1 | 10.0 | | | |
| 2.1 | Define a problem. | Professionals | 4 | 0 | 4 | 3.4 | 96.6 | 67 | 58.3 | 37 | 32.2 | 11 | 9.6 | 0.083 | 2.30 | 38/70 |
| | | Administrators | 9 | 0 | 9 | 12.2 | 87.8 | 29 | 44.6 | 23 | 35.4 | 13 | 20.0 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 18 | 72.0 | 5 | 20.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 7 | 77.8 | 2 | 22.2 | 0 | 0.0 | | | |
| 1.4 | Assess and define the health status of populations. | Professionals | 3 | 1 | 4 | 3.3 | 96.6 | 47 | 40.9 | 50 | 43.5 | 18 | 15.7 | 0.246 | 2.25 | 40/70 |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 29 | 43.3 | 22 | 32.8 | 16 | 23.9 | | | |
| | | Academics | 1 | 0 | 1 | 4.0 | 96.0 | 14 | 58.3 | 7 | 29.2 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 8.8 | Manage information systems for decision-making. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 53 | 46.9 | 52 | 46.0 | 8 | 7.1 | 0.147 | 2.25 | 40/70 | |
| | | Administrators | 6 | 0 | 8 | 10.8 | 89.2 | 24 | 36.4 | 32 | 48.5 | 10 | 15.2 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 17 | 68.0 | 7 | 28.0 | 1 | 4.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 4 | 40.0 | 2 | 20.0 | | | | |
| 4.1 | Interact sensitivity, effectively and professionally. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 44 | 38.9 | 61 | 54.0 | 8 | 7.1 | 0.209 | 2.24 | 42/70 | |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 34 | 49.3 | 28 | 40.6 | 7 | 10.1 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 13 | 52.0 | 8 | 32.0 | 4 | 16.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 4 | 40.0 | 2 | 20.0 | | | | |
| 7.6 | Conduct a community assessment. | Professionals | 4 | 1 | 5 | 4.2 | 95.8 | 51 | 44.7 | 50 | 43.9 | 13 | 11.4 | 0.537 | 2.24 | 42/70 | |
| | | Administrators | 5 | 0 | 5 | 6.8 | 93.2 | 26 | 37.7 | 32 | 46.4 | 11 | 15.9 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 11 | 44.0 | 10 | 40.0 | 4 | 16.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | | |
| 2.11 | Illuminate issues from data. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 50 | 44.2 | 45 | 39.8 | 18 | 15.9 | 0.281 | 2.22 | 44/70 | |
| | | Administrators | 7 | 1 | 8 | 10.9 | 89.2 | 25 | 37.9 | 34 | 51.5 | 7 | 10.6 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 12 | 50.0 | 11 | 45.8 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 3 | 30.0 | 1 | 10.0 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|----------|-------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|--|
| | | | Missing | Not Core | Total | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Vaire | Rank | |
| | | | N | N | N | % | | N | % | N | % | N | % | X ² | | | |
| 5.13 | Create a culture of ethical standards. | Professionals | 6 | 2 | 8 | 6.7 | 93.3 | 49 | 44.1 | 54 | 48.6 | 8 | 7.2 | 0.197 | 2.22 | 44/70 | |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 22 | 32.8 | 36 | 53.7 | 9 | 13.4 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 15 | 60.0 | 7 | 28.0 | 3 | 12.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 3 | 30.0 | 2 | 20.0 | | | | |
| 2.2 | Determine appropriate use and limitations of data. | Professionals | 5 | 1 | 6 | 5.0 | 95.0 | 62 | 54.9 | 44 | 38.9 | 7 | 6.2 | 0.007* | 2.21 | 46/70 | |
| | | Administrators | 9 | 2 | 11 | 14.9 | 85.1 | 22 | 34.9 | 29 | 46.0 | 12 | 19.0 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 13 | 54.2 | 9 | 37.5 | 2 | 8.3 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 7 | 70.0 | 1 | 10.0 | 2 | 20.0 | | | | |
| 1.3 | Apply basic public health sciences. | Professionals | 4 | 2 | 6 | 5.1 | 95.0 | 40 | 35.4 | 52 | 46.0 | 21 | 18.6 | 0.199 | 2.19 | 47/70 | |
| | | Administrators | 6 | 1 | 7 | 9.5 | 90.5 | 25 | 37.3 | 23 | 34.3 | 19 | 28.4 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 15 | 60.0 | 8 | 32.0 | 2 | 8.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | | |
| 2.12 | Obtain and interpret community risks and benefits. | Professionals | 5 | 2 | 7 | 5.9 | 94.1 | 52 | 46.4 | 48 | 42.9 | 12 | 10.7 | 0.861 | 2.17 | 48/70 | |
| | | Administrators | 7 | 0 | 7 | 9.5 | 90.5 | 30 | 44.8 | 28 | 41.8 | 9 | 13.4 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 16 | 66.7 | 7 | 29.2 | 1 | 4.2 | | | | |
| | | MOPH | 1 | 0 | 1 | 10.0 | 90.0 | 4 | 44.4 | 3 | 33.3 | 2 | 22.2 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | Weighted Mean | | |
|------------------------------|--|----------------|------------------|------|----------|------|------|---------------|------|----------------|------|-----------|------|---------------|-------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 5.12 | Ensure participation of key stakeholders. | Professionals | 6 | 5.8 | 7 | 5.8 | 94.1 | 59 | 52.7 | 47 | 42.0 | 6 | 5.4 | 0.563 | 2.12 | 49/70 |
| | | Administrators | 6 | 9.5 | 7 | 9.5 | 90.5 | 30 | 44.8 | 32 | 47.8 | 5 | 7.5 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 14 | 56.0 | 9 | 36.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 10.0 | 1 | 10.0 | 90.0 | 3 | 33.3 | 4 | 44.4 | 2 | 22.2 | | | |
| 7.2 | Collaborate with partners to promote health. | Professionals | 7 | 6.7 | 8 | 6.7 | 93.3 | 50 | 45.0 | 52 | 46.8 | 9 | 8.1 | 0.647 | 2.12 | 49/70 |
| | | Administrators | 6 | 10.8 | 8 | 10.8 | 89.2 | 25 | 37.9 | 35 | 53.0 | 6 | 9.1 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 11 | 44.0 | 9 | 36.0 | 5 | 20.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 5 | 50.0 | 2 | 20.0 | | | |
| 1.2 | Use basic research designs and methods. | Professionals | 3 | 5.0 | 6 | 5.0 | 95.0 | 36 | 31.9 | 57 | 50.4 | 20 | 17.7 | 0.146 | 2.11 | 51/70 |
| | | Administrators | 7 | 12.2 | 9 | 12.2 | 87.8 | 26 | 40.0 | 23 | 35.4 | 16 | 24.6 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 11 | 44.0 | 10 | 40.0 | 4 | 16.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 4 | 40.0 | 1 | 10.0 | | | |
| 1.7 | Identify limitations of research. | Professionals | 2 | 3.4 | 4 | 3.4 | 96.6 | 31 | 27.0 | 62 | 53.9 | 22 | 19.1 | 0.017 | 2.10 | 52/70 |
| | | Administrators | 8 | 14.9 | 11 | 14.9 | 85.1 | 26 | 41.3 | 20 | 31.7 | 17 | 27 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 11 | 44.0 | 11 | 44.0 | 3 | 12.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 6 | 60.0 | 2 | 20.0 | 2 | 20.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|------|----------|----|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 2.3 | Select and define variables. | Professionals | 6 | 5.8 | 1 | 7 | 94.1 | 43 | 38.4 | 60 | 53.6 | 9 | 8.0 | 0.019 | 2.10 | 52/70 | |
| | | Administrators | 8 | 12.2 | 1 | 9 | 87.8 | 21 | 32.3 | 29 | 44.6 | 15 | 23.1 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 13 | 52.0 | 10 | 40.0 | 2 | 8.0 | | | | |
| | | MOPH | 1 | 10.0 | 0 | 1 | 90.0 | 4 | 44.4 | 3 | 33.3 | 2 | 22.2 | | | | |
| 2.7 | Make relevant inferences from data. | Professionals | 6 | 7.5 | 3 | 9 | 92.4 | 35 | 31.8 | 59 | 53.6 | 16 | 14.5 | 0.106 | 2.09 | 54/70 | |
| | | Administrators | 7 | 13.6 | 3 | 10 | 86.5 | 21 | 32.8 | 26 | 40.6 | 17 | 26.6 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 15 | 60.0 | 7 | 28.0 | 3 | 12.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 5 | 50.0 | 3 | 30.0 | 2 | 20.0 | | | | |
| 6.5 | Use appropriate channels to disseminate information. | Professionals | 7 | 6.7 | 1 | 8 | 93.3 | 35 | 31.5 | 64 | 57.7 | 12 | 10.8 | 0.549 | 2.09 | 54/70 | |
| | | Administrators | 7 | 9.5 | 0 | 7 | 90.5 | 19 | 28.4 | 37 | 55.2 | 11 | 16.4 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 12 | 48.0 | 11 | 44.0 | 2 | 8.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | | |
| 4.3 | Adapt problem solving to fit cultural differences. | Professionals | 5 | 5.9 | 2 | 7 | 94.1 | 40 | 35.7 | 58 | 51.8 | 14 | 12.5 | 0.502 | 2.08 | 56/70 | |
| | | Administrators | 7 | 10.9 | 1 | 8 | 89.2 | 20 | 30.2 | 40 | 60.6 | 6 | 9.1 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 10 | 40.0 | 8 | 32.0 | 7 | 28.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN: Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|-------------------------------|---|----------------|------------------|---|----------|------|------|---------------|----------------|----|-----------|----|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | | N | % | N | % | | | | X ² |
| 4.2 | Identify the role of cultural factors service delivery. | Professionals | 5 | 2 | 7 | 5.9 | 94.1 | 36 | 32.1 | 67 | 59.8 | 9 | 8.0 | 0.909 | 2.06 | 57/70 |
| | | Administrators | 8 | 1 | 9 | 12.2 | 87.8 | 19 | 29.2 | 41 | 63.1 | 5 | 7.1 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 8 | 32.0 | 13 | 52.0 | 4 | 16.0 | | | |
| | | MOPH | 1 | 0 | 1 | 10.0 | 90.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | | | |
| 7.5 | Identify community resources. | Professionals | 4 | 2 | 6 | 5.1 | 95.0 | 49 | 43.4 | 59 | 52.2 | 5 | 4.4 | 0.013 | 2.05 | 58/70 |
| | | Administrators | 5 | 1 | 6 | 8.2 | 91.9 | 26 | 38.2 | 30 | 44.1 | 12 | 17.6 | | | |
| | | Academics | 0 | 2 | 2 | 8.0 | 92.0 | 8 | 34.8 | 12 | 52.2 | 3 | 13.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | |
| 1.13 | Apply ethical conduct. | Professionals | 6 | 2 | 8 | 6.7 | 93.3 | 31 | 27.9 | 67 | 60.4 | 13 | 11.7 | 0.368 | 2.03 | 60/70 |
| | | Administrators | 8 | 2 | 10 | 13.5 | 86.5 | 19 | 29.7 | 33 | 51.6 | 12 | 18.8 | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 11 | 45.8 | 10 | 41.7 | 3 | 12.5 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 2.8 | Identify relevant and appropriate data. | Professionals | 8 | 2 | 10 | 8.4 | 8.4 | 34 | 31.2 | 58 | 53.2 | 17 | 15.6 | 0.200 | 1.96 | 61/70 |
| | | Administrators | 8 | 2 | 10 | 13.5 | 86.5 | 19 | 29.7 | 28 | 43.8 | 17 | 26.6 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 13 | 52.0 | 7 | 28.0 | 5 | 20.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 2 | 20.0 | 5 | 50.0 | 3 | 30.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | | Weighted Mean | |
|------------------------------|---|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|-------|---------------|----------------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank | |
| | | | N | % | N | % | | N | % | N | % | N | % | | | | X ² |
| 2.4 | Use basic research designs and methods. | Professionals | 6 | 1 | 7 | 5.8 | 94.1 | 38 | 33.9 | 55 | 49.1 | 19 | 17.0 | 0.310 | 1.91 | 63/70 | |
| | | Administrators | 8 | 2 | 10 | 13.5 | 86.5 | 20 | 31.3 | 27 | 42.2 | 17 | 26.6 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 8 | 32.0 | 12 | 48.0 | 5 | 20.0 | | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 5 | 55.6 | 2 | 22.2 | 2 | 22.2 | | | | |
| 2.10 | Evaluate data. | Professionals | 5 | 2 | 7 | 5.9 | 94.1 | 35 | 31.3 | 60 | 53.6 | 17 | 15.2 | 0.553 | 1.91 | 63/70 | |
| | | Administrators | 6 | 3 | 9 | 12.2 | 87.8 | 18 | 27.7 | 33 | 50.8 | 14 | 21.5 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 13 | 54.2 | 10 | 41.7 | 1 | 4.2 | | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 4 | 44.4 | 3 | 33.3 | 2 | 22.2 | | | | |
| 1.12 | Use computer applications. | Professionals | 8 | 1 | 9 | 7.5 | 92.4 | 23 | 20.9 | 65 | 59.1 | 22 | 20.0 | 0.603 | 1.90 | 65/70 | |
| | | Administrators | 11 | 3 | 14 | 19.0 | 81.1 | 12 | 20.0 | 32 | 53.3 | 16 | 26.7 | | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 8 | 32.0 | 15 | 60.0 | 2 | 8.0 | | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 5 | 50.0 | 2 | 20.0 | | | | |
| 2.9 | Apply ethical principles. | Professionals | 5 | 3 | 8 | 6.7 | 93.3 | 42 | 37.8 | 51 | 45.9 | 18 | 16.2 | 0.143 | 1.84 | 67/70 | |
| | | Administrators | 7 | 2 | 9 | 12.2 | 87.8 | 18 | 27.7 | 29 | 44.6 | 18 | 27.7 | | | | |
| | | Academics | 0 | 1 | 1 | 4.0 | 96.0 | 8 | 33.3 | 13 | 54.2 | 3 | 12.5 | | | | |
| | | MOPH | 0 | 1 | 1 | 10.0 | 90.0 | 3 | 33.3 | 5 | 56.6 | 1 | 11.1 | | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|--|----------------|------------------|---|----------|------|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 1.9 | Use public health information packages. | Professionals | 6 | 4 | 10 | 8.4 | 91.6 | 15 | 13.8 | 65 | 59.5 | 29 | 26.6 | 0.092 | 1.65 | 69/70 |
| | | Administrators | 12 | 7 | 19 | 25.7 | 74.3 | 12 | 21.8 | 23 | 41.8 | 20 | 36.4 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 3 | 12.0 | 11 | 44.0 | 11 | 44.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 6 | 60.0 | 1 | 10.0 | | | |
| B | Suggested Core Skills | | | | | | | | | | | | | | | |
| 1.6 | Identify and access current scientific evidence. | Professionals | 6 | 2 | 8 | 6.7 | 93.3 | 41 | 36.9 | 54 | 48.6 | 16 | 14.4 | 0.193 | 2.04 | 59/70 |
| | | Administrators | 8 | 1 | 9 | 12.2 | 87.8 | 24 | 36.9 | 25 | 38.5 | 16 | 24.6 | | | |
| | | Academics | 2 | 0 | 2 | 8.0 | 92.0 | 11 | 47.8 | 10 | 43.5 | 2 | 8.7 | | | |
| | | MOPH | 2 | 0 | 2 | 20.0 | 80.0 | 5 | 62.5 | 3 | 37.5 | 0 | 0.0 | | | |
| 1.10 | Design a surveillance system. | Professionals | 7 | 5 | 12 | 10.1 | 89.9 | 29 | 27.1 | 57 | 53.3 | 21 | 19.6 | 0.338 | 1.92 | 62/70 |
| | | Administrators | 10 | 6 | 16 | 21.6 | 78.4 | 19 | 32.8 | 24 | 41.4 | 15 | 25.9 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 9 | 36.0 | 14 | 56.0 | 2 | 8.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 5 | 50.0 | 1 | 10.0 | | | |
| 1.11 | Operate a surveillance system. | Professionals | 9 | 4 | 13 | 11.0 | 89.1 | 20 | 18.9 | 62 | 58.5 | 24 | 22.6 | 0.703 | 1.86 | 66/70 |
| | | Administrators | 11 | 5 | 16 | 21.7 | 78.4 | 13 | 22.4 | 30 | 51.7 | 15 | 25.9 | | | |
| | | Academics | 0 | 0 | 0 | 0 | 100 | 7 | 28.0 | 12 | 48.0 | 6 | 24.0 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 4 | 40.0 | 6 | 60.0 | 0 | 0.0 | | | |

⁵ p value <0.01 indicated with *

Table-5.37: Suggested Public Health Skills for Top-level Management Staff (Cont.)

| SN Competency Domain & Skill | Public Health Skills | Group | Not a Core Skill | | | | Core | If Core Skill | | | | | | | Weighted Mean | |
|------------------------------|---------------------------------|----------------|------------------|------|----------|----|------|---------------|------|----------------|------|-----------|------|----------------------|---------------|-------|
| | | | Missing | | Not Core | | | Proficiency | | Knowledge able | | Awareness | | p value ⁵ | Value | Rank |
| | | | N | % | N | % | | N | % | N | % | N | % | | | |
| 2.5 | Partner with communities. | Professionals | 6 | 10.0 | 6 | 12 | 89.9 | 32 | 29.9 | 57 | 53.3 | 18 | 16.8 | 0.915 | 1.84 | 67/70 |
| | | Administrators | 8 | 14.9 | 3 | 11 | 85.1 | 20 | 31.7 | 32 | 50.8 | 11 | 17.5 | | | |
| | | Academics | 1 | 8.0 | 1 | 2 | 92.0 | 8 | 34.8 | 11 | 47.8 | 4 | 17.4 | | | |
| | | MOPH | 0 | 0 | 0 | 0 | 100 | 3 | 30.0 | 4 | 40.0 | 3 | 30.0 | | | |
| 2.6 | Use appropriate data collection | Professionals | 7 | 10.9 | 6 | 13 | 89.1 | 23 | 21.7 | 59 | 55.7 | 24 | 22.6 | 0.175 | 1.32 | 70/70 |
| | | Administrators | 7 | 16.3 | 5 | 12 | 83.8 | 13 | 21.0 | 27 | 43.5 | 22 | 35.5 | | | |
| | | Academics | 0 | 8.0 | 2 | 2 | 92.0 | 2 | 8.7 | 14 | 60.9 | 7 | 30.4 | | | |
| | | MOPH | 0 | 20.0 | 2 | 2 | 80.0 | 0 | 0.0 | 7 | 87.5 | 1 | 12.5 | | | |

⁵ p value <0.01 indicated with *

3. Partner Perspectives on Target Groups, Learning Needs and Programmatic Requirements for the Learning @ the Workplace Program

In the analysis, the inter-analyst reliability showed a Coefficient of Reliability by the Holsti test 0.81 and by Cohen's kappa 0.77.

a. Who are the local Target-groups for the Learning @ the Workplace Program?

Two opposing viewpoints were expressed on Target Groups: (a) provincial public health staff who are involved in training and instruction and (b) a total human resource pool viewpoint that includes public health staff from all levels within the system. The latter would more directly benefit the PHO.

1) Perspectives on educational background

Verbatim (pcmom2): "In my opinion, any provincial public health personnel who hold a Bachelor's degree should be encouraged to study at this level. Some non-health professionals are really interested in research work and want to study in this program because they lack research skills".

Participants referred to two specific groups within the provincial health system, namely the one with a medical or para-medical background and the other with a non-medical background.

Participants expressed that a postgraduate program in public health should not exclude applicants with a non-health related Bachelor's degree.

Although all participants accepted the principle that postgraduate public health education should be accessible to both health and non-health related educational backgrounds, there were other valued conditions that played a role, such as motivation and time management as expressed by some of the participants.

Verbatim (pcmom2): "Some just want to get a Master's degree, I therefore prefer to support only those who are really interested to develop their work"

Verbatim (pcmof1): "I agree with others that the student's determination is very important. In addition, they should be able to manage their time well".

2) Perspectives on Job Responsibilities

Verbatim (pcmom4): " Yes I do agree with my colleague, we should emphasize on educators, because they are responsible for research work at provincial or lower level, because this group will help the provincial health office to create innovation in the province".

There were different opinions among participants on Target Groups among public health professionals in terms of Job Categories.

Several participants pointed out that people involved in instruction, training and education would be preferred as Target Groups.

However, the assumption was that the human resource pool as well as responsibility domains are fairly stable within the provincial health system. This seemed not the case as pointed out by (pcmom3) one of the participants.

Verbatim (pcmom3): " Our staff changes all the time. I think if possible, I would like everyone to study this program".

Other participants supported the viewpoint that LWP should be accessible for professionals from various Job Categories.

Verbatim (pcmof1): "Everyone has to do inquiry work and planning, not just educators, therefore, I think it would be great if we were able to educate all our staff to understand the inquiry and problem solving process. That is before taking any action, they should analyse the situation, and develop action plans, implement, monitor and evaluate the projects. So we should make this come true in every staff level".

3) Perspectives on Functional Levels

Verbatim (pcmom2): " In fact, I do not think that there should be any difference among groups of public health professionals. It does not depend on the level but it depends on the probability to graduate and how to integrate their study with their current jobs".

Functional Levels in the provincial health system in Thailand can be generally classified into provincial, district and sub-district levels. Compared to the perspectives on Job

Responsibilities, there was more consensus among participants when it came to Functional Levels within the provincial health system. The majority of participants expressed that the LWP

should be accessible for all Levels within the provincial health system up to health centres at the sub-district level. Participants found it important that all levels have access to the LWP.

Only one participant doubted whether health centre staff would be capable to enrol, while other participants saw direct benefits to the PHO as an important criterion to define the appropriate Level.

b. What would be important Learning Needs among Target Groups?

Verbatim (pcmof1): "It would be great if we could educate all staff to understand the inquiry planning process. That is, before taking any action, they should analyze the situation, then develop activities, and monitor and evaluate the projects".

One participant expressed the view that Learning Need may vary from group to group based on present or future Staff Category and Functional Levels. Also provincial goals were important factors that affected Learning Need and these development goals may vary among provinces. Therefore, Learning Need may, vary among different provincial groups.

The following Learning Need for the targeted provincial human resource pool were perceived as important among participants; (1) situation analysis, (2) development of interventions, (3) monitoring and evaluation skills and (4) developing a lifelong learning attitude.

The terms 'research and inquiry' used by some participants was often referred to as a systematic approach in problem analysis and problem solving. Statements indicate that there is a need for capacity building among staff in situation analysis and problem solving methods.

Problem analysis and problem solving skills whether applied in investigation and policy formulation (strategic management) or at the operational level to improve services through evaluation (operational management) were considered important. Further, a weakness among staff, in insights of social aspects and determinants of public health was recognised, as well as the need to improve communication skills.

c. What Programmatic Aspects are important?

1) Academic Level

The discussion on eventual multiple options in Academic Levels for the LWP yielded the following viewpoints:

Verbatim (pcmom5): "In our province there are so many courses provided that students can select which one most suits their needs. If students encounter financial problems, they can select a cheaper program".

Verbatim (pcmom2): "I think that no one want to pay and gets only a certificate, it lacks motivation".

Certificate courses in public health were not attractive and are location sensitive. For example in some provinces there was a wide variety of training programs offered, therefore finding a market for new certificate courses would be difficult as raised by several participants.

A Postgraduate Diploma in public health could address certain need. It would be less expensive in terms of tuition fee and, therefore, improve access to continuous education. A condition considered as important by most of the participants was that credits should be transferable if students decide to continue to study a Master's degree.

Verbatim (pcmof1): "We found that the students studied this program because they wanted to get the Master's degree".

A Master's degree in public health was considered to yield the highest motivation among professionals.

Verbatim (pcmof1): "Those, who are not capable to pay for the whole (MPH) program could opt for a certificate or diploma. These various options can meet their individual needs. I think it is an advantage to have multiple options".

2) Program Type

Participants did value a professional oriented program that uses problem based, student centred approaches and health system oriented learning. The approach which utilises

the students' work situation and environment for learning, as well as the opportunity to study at their workplace were considered as important program aspects.

Verbatim (pcmof1): "One interesting approach is that it allows the students to apply their working situation and environment for their learning experiences and they can study at their workplace. I remember that when the College introduced this program to the provincial public health office, many people were interested. What they found interesting was that they did not have to abandon their job-responsibilities to study. They never had any good opportunity to study in their own workplace before. As I have mentioned earlier, if the program can relate to the provincial public health plans, that would be great. I still prefer students to select their project topics from a provincial situation analysis".

3) Program Major

Verbatim (pcmom2): "The purpose of participating in this program is that we were doing the health care reform project. My prior understanding was that we could integrate the reform project into the Learning @ the Workplace program".

Verbatim (pcmof1): "At the beginning, I came to know this program when I was doing the health systems reform project".

Most of the participants identified that the main purpose for them to collaborate with the program was to link health system reform with human resource development in their province.

Another aspect considered as important was collaboration among key program partners such as the CPH, the PHO and students.

d. What is important in terms of Partnerships?

1) College-Workplace Liaison

Verbatim (lwpdm1): The Learning @ the Workplace Program is based on the concept of partnerships such as co-ordination, planning, communication and implementation needs to be in place.

Verbatim (lwpdm2): The original philosophy of the program is to utilise local resources, but the problem is it is not implemented systematically. The prime concern is the relationships among program partners.

Participants pointed out that there is a need for collaboration, co-ordination, communication, integration and systematic management. This need situated at various levels such as: (a) the national level between the CPH and the MOPH partners, (b) the local level between the CPH and the PHO, as well as (c) the instructional level between faculty and PHO, local resource persons and facilitators.

Another point of concern raised was the availability of resource persons for the program such as the number of faculty available for teaching as well as local resource persons to facilitate program implementation.

Verbatim (pcmof1): Maybe, there are too many students in 5 provinces. If possible, there should be more lecturers to take care for each public health site.

Verbatim (pcmom3): We should have one tutor/ facilitator in each province.

Verbatim (lwpf1): There's no local networking in place and the program requires local expertise.

Verbatim (pcmof2): When the lecturer went to teach the students at the public health sites, they made their own appointment directly with the students. We only knew that there would be a class.

Verbatim (pcmom1) I never knew what we needed to contribute to the LWP Program.

2) Reciprocity

Participants expressed a clear need for integrating workplace and local community situations and problems into the learning process. To foster gains for the provincial health system and students, the program should make use of local evaluation, development and applied research projects as learning experiences in course work.

Further, there was the need to identify 'thesis projects' relevant to the local health development plan as well as suitable for students as a learning experience.

Verbatim (pcmof5): The important thing is that we should have a connecting process between the real situation we encounter in our work areas and the teaching-learning process.

Verbatim (pcmof1): To be more efficiently, the college should set activities in order to get interactions with provincial health office. It also helps to know the situation, the progress of the program better and the relevance of the curriculum content to the specific provincial public health plans. I think we should make this happen because it will give us a chance to integrate the LWP with our responsibilities.

Verbatim (pcmom2): I think the student should ask for the good advice from provincial health office whether their topics are relevant to provincial plan or not. Verbatim (pcmof3): We both students and provincial health office would get the most benefits from our collaboration.

Verbatim (lwpdm1): Integration of local research and development projects, as learning experiences, needs to be emphasised.

Verbatim (lwpdm2): Using the real local situation, as program input is important. This would allow the students and also the instructors to understand the local situation and find solutions. This would create mutual benefits not only for the students but also the instructors as they would gain knowledge about local situations, widening their horizons and they would be able to conduct local-related research projects for future academic improvement.

4. Students' Perspectives on Target Groups, Learning Need and Programmatic Requirements

In the analysis, inter-analyst reliability showed a Coefficient of Reliability by the Holsti test of 0.82 and by Cohen's kappa 0.83.

a. Who are the local Target-Groups for the Learning @ the Workplace Program?

The LWP was seen as a postgraduate program that targeted students from rural areas and personnel from provincial health offices. Participants viewed that a postgraduate program in public health should not exclude applicants with a non-health related Bachelor's degree.

Verbatim (ayutf3): "I remember that the program really wanted to focus on the group of public health personnel that work in rural areas, especially in the provincial health office".

Verbatim (chon1f3): "Some people who have a degree in other fields aside from health can study in this program, I don't think this is a problem. The most important thing is the College must have criteria".

Participants emphasised the importance of clear criteria in selecting students in terms of Target Groups' characteristics and pre-requisites including language skills and professional experience. An important statement made by a student was that selection criteria should reflect the program's aim and objectives.

Verbatim (ayutm2): "The College should have clear understanding about its target group. Who they are, what they do, how they think, their characteristics, their interests and their educational background".

Verbatim (Isanf7): " Selection criteria should depend on the program's objective. If the program aims to develop public health personnel in rural areas, the College should define criteria accordingly"

b. What would be important Learning Need among Target Groups?

Continuous learning as well as applying knowledge to professional settings was seen as important. Most of the participants expressed Learning Need related to themselves such as (1) qualitative and quantitative research methodology, (2) program evaluation and (3) strategic planning.

Verbatim (chon2m4): "Curiosity in learning and the idea of continuous learning are important".

Verbatim (ayutm2): "We do not have a deep understanding of both qualitative and quantitative perspectives. I would like to learn more about project evaluation. I'm trying to find out some Thai textbook on strategic planning".

Some students pointed out that they wanted to develop more management and applied research skills, while several were concerned with writing skills.

Verbatim (chon2m4): "I want to know much more details about management".

Verbatim (isanm5): "For me, I still need to know more about research work and implementation".

Verbatim (isanf7): "I think we still haven't learned much about academic writing and thesis development".

c. What Programmatic Aspects are important?

1) Program Level

The discussion on eventual multiple options in academic levels for the LWP yielded the following viewpoints:

Whatever levels the CPH would consider it would all depend on the CPH's potential, readiness and performance. There was a perceived need to improve the quality of the program rather than increasing options in academic levels.

Multiple options in academic levels were perceived as interesting and useful. These would meet the various needs of students. Further, participants did point out that there should be a system to accumulate course credits so that students would have the option to aim at diploma and Master's degree.

Verbatim (ayutf5): "It depends on the College's potential and performance. If our courses are not good enough, no one will send people to study".

Verbatim (isanf7): "I think the College should assess its readiness before making the decision to provide multiple options". Verbatim (isanall): "That's right!"

Verbatim (ayutf3): "It depends on the capacity of the College. I have to check the College's readiness in terms of curriculum, administrative management, teaching facilities, technology etc. If everything remains the same, I will decide not to undertake any courses because I think I will not gain the required knowledge".

Verbatim (chon1m1): "This idea can serve the need and interest of customers very well. The College needs to primarily consider the needs and expectations of its customers".

Verbatim (isanm3): "I would like the College to implement multiple options in such a way that we can gradually accumulate credits until we finish the MPH".

2) Program Type

Participants did value a professional program as the LWP that used problem-based, student-centred and health system-oriented learning. The potential to utilise students' work situation and environment for learning as well as studying at the workplace were seen as important program aspects.

Verbatim (isanf3): "I agree with the lecturers that once we complete this program, we will work as an executive officer, not a researcher. Therefore, there is no need to have in-depth knowledge about research".

Verbatim (payam6): "In terms of the relevance of learning to work practice, I think we can use the current problems from our workplace to be our learning lesson. At the same time we can apply the knowledge to our current responsibilities".

Verbatim (payf5) "This program does not emphasise academic or theoretical knowledge, the focus is on thinking analytically and systematically".

3) Program Major

In general terms respondents viewed that the program focus or major should address their professional need and be broad enough to address the challenges of public health generalists. Regular returning themes throughout the various student groups were the need to

learn about health systems reform, program development, program evaluation and the related methodologies, within the professional context of health systems development.

Verbatim (isanf4) "I am working at the district public health office. Sometimes, I couldn't have a clear view of the public health system. By enrolling for this program, I could make everything in my work clearer and think more systematically. My expectation when entering the program was to learn about proposal writing. I need to raise funds and I expected teachers to help me, guiding me to find out the weakness of my projects".

Verbatim (chon2m1) "Our program's degree is in public health and the major is 'Health System Development', right? But we hardly know anything about it. I once said that we should have learned health systems and health system reform".

Verbatim (chon2f1) "We should learn about methods in program evaluation. I thought if I take this program, I would be good at proposal writing, program evaluation and fund raising".

5. Perspectives of Public Health Experts in Prioritising Public Health Practices, Services, Target Groups and Learning Needs

a. Prioritising Public Health Practices and Services

As shown in Table-5.38, None of the respondents rated any of the Practices as Not Important.

Following Practices were considered as Important: 'Health Insurance' Important/Very Important (42.9%), 'Equality' (57.1%), 'System Reform' (85.7%), 'Decentralisation' Important/Very Important (42.9%), 'Develop Primary Care' (71.4), Improve 'Civil Society Capability' (57.1%), Improve 'Quality of Services' (57.1%), 'Research and Development' (57.1%) and 'Development of Health Industry' (71.4%).

"The fact that questionnaire findings point directly to top-level management staff in terms of being responsible for all listed Public Health Services is not a response bias. It is a reflection of the real current situation in provincial Thailand. Top-level managers have authority over financial resources and allocate these resources to the various sections in the province. Therefore, they have the power and people consider them to be final responsible for all practices. This situation is supported by the current budget system within the Ministry".

A Regional Supervisor MOPH.

The Practice 'Health Promotion' (71.4%) was considered as Very Important.

For Public Health Services, only one respondent perceived 'Enforcing Laws' as Not Important.

Only 'Policy Development' (57.1%) under the Services was seen as Less Important.

"The findings on required Public Health Services seem to indicate that the provinces are not ready for health care reform, health system reform or the 30 Baht policy".

A NGO representative.

For the following Services, respondents had varied opinions:

'Disseminate information' from Less Important (26.6%) to Very Important (28.6%),
'Enforcing Laws' from Not Important (14.3%) to Very Important (14.3%).

The following Services were considered as Important: 'Partnerships' (57.1%), 'Planning and Management' (85.7%), 'Assure Human Resources' (71.4%), 'Evaluation' (85.7%) and 'Research' (71.4%).

The following Services were considered as Very Important: 'Monitor' (57.1%), 'Diagnose and Investigate' (71.4%), 'Access to Services' (57.1%),

Table-5.38: Frequencies and Proportions on the Degree of Importance of Public Health Practices and Services as Perceived by Respondents

| No | Public Health Practices & Services | Not Important | | Less Important | | Important | | Very Important | |
|------------|--|---------------|----------|----------------|----------|-----------|----------|----------------|----------|
| | | N | % | N | % | N | % | N | % |
| No | A. National Public Health Practices | | | | | | | | |
| 1 | Health Promotion | 0 | 0.0 | 0 | 0.0 | 2 | 28.6 | 5 | 71.4 |
| 2 | Equity | 0 | 0.0 | 1 | 14.3 | 4 | 57.1 | 2 | 28.6 |
| 3 | Health Insurance | 0 | 0.0 | 1 | 14.3 | 3 | 42.9 | 3 | 42.9 |
| 4 | System Reform | 0 | 0.0 | 1 | 14.3 | 6 | 85.7 | 0 | 0.0 |
| 5 | Decentralise | 0 | 0.0 | 1 | 14.3 | 3 | 42.9 | 3 | 42.9 |
| 6 | Develop Primary Care | 0 | 0.0 | 0 | 0.0 | 5 | 71.4 | 2 | 28.6 |
| 7 | Civil Society Capability | 0 | 0.0 | 1 | 14.3 | 4 | 57.1 | 2 | 28.6 |
| 8 | Quality of Services | 0 | 0.0 | 1 | 14.3 | 4 | 57.1 | 2 | 28.6 |
| 9 | Research & Development | 0 | 0.0 | 0 | 0.0 | 4 | 57.1 | 3 | 42.9 |
| 10 | Develop Health Industry | 0 | 0.0 | 2 | 28.6 | 5 | 71.4 | 0 | 0.0 |
| No. | B. Public Health Services | N | % | N | % | N | % | N | % |
| 1 | Monitor | 0 | 0.0 | 0 | 0.0 | 3 | 42.9 | 4 | 57.1 |
| 2 | Diagnose & Investigate | 0 | 0.0 | 0 | 0.0 | 2 | 28.6 | 5 | 71.4 |
| 3 | Disseminate information | 0 | 0.0 | 2 | 28.6 | 3 | 42.9 | 2 | 28.6 |
| 4 | Policy Development | 0 | 0.0 | 4 | 57.1 | 3 | 42.9 | 0 | 0.0 |
| 5 | Partnerships | 0 | 0.0 | 2 | 28.6 | 4 | 57.1 | 1 | 14.3 |
| 6 | Planning & Management | 0 | 0.0 | 0 | 0.0 | 6 | 85.7 | 1 | 14.3 |
| 7 | Enforcing Laws | 1 | 14.3 | 2 | 28.6 | 3 | 42.9 | 1 | 14.3 |
| 8 | Assure Human Resources | 0 | 0.0 | 1 | 14.3 | 5 | 71.4 | 1 | 14.3 |
| 9 | Access to Services | 0 | 0.0 | 1 | 14.3 | 2 | 28.6 | 4 | 57.1 |
| 10 | Evaluation | 0 | 0.0 | 0 | 0.0 | 6 | 85.7 | 1 | 14.3 |
| 11 | Research | 0 | 0.0 | 2 | 28.6 | 5 | 71.4 | 0 | 0 |

b. Perceptions on Professional Target Group(s) for the Learning @ the Workplace Program

As presented in Table-5.39, the majority of respondents had the opinion that the LWP should target both with a health and non-health degree, Top-level Management Staff (100%), Mid-level Management Staff (71.4%) and Front-line Staff (66.7%).

"Reflecting on the important changes to come in terms of health system reform, the decentralization process and health financing, mid-level management staff should be the Target Group for Learning @ the Workplace Program".

A representative of the MOPH.

Table-5.39: Frequencies and Proportions on the Type of Staff that the Learning at the Workplace Program should Target Perceived by Respondents

| Target Groups | Health Degree | | Non Health Degree | | Health & Non Health Degree | | None | |
|-----------------------|---------------|------|-------------------|-----|----------------------------|-------|------|-----|
| | N | % | N | % | N | % | N | % |
| Front-line Staff (-1) | 2 | 33.3 | 0 | 0.0 | 4 | 66.7 | 0 | 0.0 |
| Mid-level Staff | 2 | 28.6 | 0 | 0.0 | 5 | 71.4 | 0 | 0.0 |
| Top-level Staff (-1) | 0 | 0.0 | 0 | 0.0 | 6 | 100.0 | 0 | 0.0 |

c. Perspectives on the Importance of Learning Need

“Academic respondents are those people actively involved in postgraduate education and 2 of the 4 universities have international programs, therefore, the likelihood that these academics train mainly mid and top-level staff is high. Most academic respondents have no realistic or direct contact with front-line staff”.

A NGO representative.

As presented in Table-5.40, Front-line Staff should be Proficient in problem solving and communication skills. Further, they should be Knowledgeable in applied quantitative research, applied

qualitative research, analytical, social science, strategic management, evaluation, operational management, and project formulation skills.

Mid-level Management Staff should be Proficient in applied quantitative research, applied qualitative research, analytical, problem solving, communication, evaluation, operational management and project formulation skills. Further they should be Knowledgeable in social science and strategic management skills.

Top-level Management Staff should be Proficient in analytical, problem solving,

“The health system and health financing will drastically change. Hospitals come under the supervision of Area Health Boards and they will need to network with community hospitals and health centers. Regional Health Insurance Offices will handle financing of care. As a result, Provincial Health Offices will have a new role and will act as a local MOPH to regulate, survey, monitor, promote and so on”.

“There will come an increased need for the Learning at the Workplace Program to demonstrate the usefulness of the program for staff development as well as gain for employers”

A representative of the MOPH.

communication, strategic management and evaluation skills. Further, they should be Knowledgeable in applied quantitative research, applied qualitative research, social science and operational management skills. Opinions are divided between Knowledgeable and Proficiency for project formulation skills.

“Think about the 30 Baht policy and how this new policy is not only going to affect the health system but also education in public health in Thailand...the Learning at the Workplace Program will have to address this challenge”.

An Academic.

Findings can be summarised as follows:

| | <i>Front-line</i> | <i>Mid-level</i> | <i>Top-level</i> |
|----------------------|---|---|--|
| <i>Awareness</i> | None | None | None |
| <i>Knowledgeable</i> | Qualitative research Quantitative research Analytical skills Social science Strategic mgt. Evaluation Operational mgt. Project formulation | Social science Strategic mgt. | Qualitative research Quantitative research Social science Operational mgt. (Project formulation) |
| <i>Proficient</i> | Problem solving Communication | Qualitative research Quantitative research Analytical skills Problem solving Communication Evaluation Operational mgt. Project formulation | Analytical skills Problem solving Communication Strategic mgt. Evaluation (Project formulation) |

Table-5.40: Frequencies and Proportions by Type of Staff on Levels of Required Mastery in Learning Objectives as Perceived by Respondents

| No | Competency | Type of Staff | Awareness | | Knowledge able | | Proficiency | |
|----|--------------------------------------|---------------|-----------|------|----------------|-------|-------------|-------|
| | | | N | % | N | % | N | % |
| 1 | Applied Quantitative Research Skills | Front-line | 1 | 16.7 | 5 | 83.3 | 0 | 0.0 |
| | | Mid-level | 1 | 14.3 | 1 | 14.3 | 5 | 71.4 |
| | | Top-level | 0 | 0.0 | 5 | 83.3 | 1 | 16.7 |
| 2 | Applied Qualitative Research Skills | Front-line | 1 | 16.7 | 4 | 66.7 | 1 | 16.7 |
| | | Mid-level | 0 | 0.0 | 3 | 42.9 | 4 | 57.1 |
| | | Top-level | 0 | 0.0 | 5 | 83.3 | 1 | 16.7 |
| 3 | Analytical Skills | Front-line | 0 | 0.0 | 5 | 83.3 | 1 | 16.7 |
| | | Mid-level | 0 | 0.0 | 1 | 14.3 | 6 | 85.7 |
| | | Top-level | 0 | 0.0 | 0 | 0.0 | 6 | 100.0 |
| 4 | Problem Solving Skills | Front-line | 0 | 0.0 | 1 | 16.7 | 5 | 83.3 |
| | | Mid-level | 0 | 0.0 | 2 | 28.6 | 5 | 71.4 |
| | | Top-level | 0 | 0.0 | 2 | 33.3 | 4 | 66.7 |
| 5 | Communication Skills | Front-line | 0 | 0.0 | 2 | 33.3 | 4 | 66.7 |
| | | Mid-level | 0 | 0.0 | 1 | 14.3 | 6 | 85.7 |
| | | Top-level | 0 | 0.0 | 0 | 0.0 | 6 | 100.0 |
| 6 | Social Science Skills | Front-line | 2 | 33.3 | 3 | 50.0 | 1 | 16.7 |
| | | Mid-level | 0 | 0.0 | 6 | 85.7 | 1 | 14.3 |
| | | Top-level | 1 | 16.7 | 4 | 66.7 | 1 | 16.7 |
| 7 | Strategic Management Skills | Front-line | 0 | 0.0 | 6 | 100.0 | 0 | 0.0 |
| | | Mid-level | 0 | 0.0 | 5 | 71.4 | 2 | 28.6 |
| | | Top-level | 0 | 0.0 | 0 | 0.0 | 6 | 100.0 |
| 8 | Evaluation Skills | Front-line | 0 | 0.0 | 6 | 100.0 | 0 | 0.0 |
| | | Mid-level | 0 | 0.0 | 1 | 14.3 | 6 | 85.7 |
| | | Top-level | 0 | 0.0 | 2 | 33.3 | 4 | 66.7 |
| 9 | Operational Management Skills | Front-line | 0 | 0.0 | 4 | 66.7 | 2 | 33.3 |
| | | Mid-level | 0 | 0.0 | 3 | 42.9 | 4 | 57.1 |
| | | Top-level | 0 | 0.0 | 4 | 66.7 | 2 | 33.3 |
| 10 | Project Formulation Skills | Front-line | 1 | 16.7 | 3 | 50.0 | 2 | 33.3 |
| | | Mid-level | 0 | 0.0 | 1 | 14.3 | 6 | 85.7 |
| | | Top-level | 0 | 0.0 | 3 | 50.0 | 3 | 50.0 |

6. Validation by Public Health Experts and Professionals of Public Health Competencies and Target Groups

a. What should be the main Target Group for the Learning @ the Workplace Program in Thailand?

"I think the program should be open to any level of staff. Not all students take this program to get promoted but they want to improve themselves. So the primary purpose of the program should be to develop staff at all levels and increase competence. Diversity of students helps to broaden students' horizon. I feel that this program aims to produce generalists not specialists and we need employees with a broad perspective. Our social problems are countless because our knowledge is limited to specifics".

A Provincial Chief Medical Officer

In the 1st voting round of the participants were reluctant to exclude any type or level of public health staff. After the 1st round, a discussion for further clarification took place that led to a 2nd voting round, as presented in Table-5.41. The 2nd voting round provided a clear main target group, namely Mid-level

Management Staff, although participants pointed out that the program should not be exclusive but inclusive for other levels of staff. Identification of a Target Group is mainly to inform curriculum development in terms of Core Skills and required Levels of Mastery to be addressed by the program.

Table-5.41: Frequencies and Proportions on the Final Vote on the Main Target Group for Learning at the Workplace Program

| Level of Staff | 1 st Round Votes | | 2 nd Round Votes | |
|----------------------------|-----------------------------|-------|-----------------------------|-------|
| | # | % | # | % |
| Front-line Staff | 4 | 36.4 | 4 | 36.4 |
| Mid-level Management Staff | 4 | 36.4 | 7 | 63.6 |
| Top-level Management Staff | 3 | 27.3 | 0 | 0.0 |
| Total ¹ | 11 | 100.0 | 11 | 100.0 |

Further analysis provided information on shifts in voting outcomes. Surprisingly, it were not the participants who voted for Top-level Management Staff in the 1st round only that shifted to Mid-level Management in the 2nd round as shown in Table-5.42.

"I think Learning @ the Workplace is a program that helps improving the learning process, so it should be open to anyone".

A Provincial Chief Medical Officer

"Health system reform will require expertise, therefore, create a demand for personnel development and work performance. From a personnel development perspective we think all staff qualifies to enroll in the Learning @ the Workplace Program, but from the reform perspective we think Mid-level Management Staff is the most important group, especially those at the district-level".

A MOPH Representative

Table-5.42: Analysis of Shift in Voting between 1st and 2nd Round for the Main Target Group

| 1 st Round From Staff Level ¹ | 2 nd Round To Staff Level | Frequency |
|--|---|-----------|
| Front-line | Font-line | 2 |
| Font-line | Mid-level | 2 |
| Front-line | Top-level | 0 |
| Mid-level | Front-line | 2 |
| Mid-level | Mid-level | 2 |
| Mid-level | Top-level | 0 |
| Top-level | Front-line | 0 |
| Top-level | Mid-level | 3 |
| Top-level | Top-level | 0 |
| Total | | 11 |

"I think Mid-level Management Staff is likely the group that can clear our messes and messy systems and take action. I think they are likely to be able to accelerate the process of change. I don't select Top-level Staff because they are often transferred and most of them can only nod or shake their head. Only few are in a position to bring their knowledge into action".

A PCMO

¹ Two Provincial representatives were unable to continue participation to address this question.

b. Out of 27 Skills for Front-line Staff, which are Not Core and if Core what Level of Mastery would be Required?

Table-5.43 presents the outcomes of the voting on Skills for Front-line Staff. Of the 27 Skills for Front-line Staff only one Skill was considered Not to be a Core Skill (76.9%), namely in the 'Partnership Skills', No. 3 'Advocate for public health programs and resources'. All other Skills were clearly considered Core Skills.

Of the 26 Skills considered to be a Core Skill none required Proficiency, while the considered Level of Mastery was Knowledgeable for 20 Skills and Awareness for 3 Skills.

The following Skills equalise in votes between the Levels of Mastery Awareness and Knowledgeable:

| Competency Domain | Skill # and Description | Voting vs. questionnaire | Awareness % | Knowledgeable % |
|--------------------------------|---|--------------------------|--------------|-----------------|
| 1. Basic Public Health Skills | 5. Apply critical thinking | Present Previous | 38.3 50.0 | 38.5 46.8 |
| | 8. Apply risk assessment | Present Previous | 30.8 41.0 | 38.5 41.0 |
| 3. Policy Development Skills | 4. State the expected outcome of policy options | Present Pervious | 50.0 58.3 | 50.0 38.9 |
| 5. Strategic Management Skills | 5. Conduct cost-effectiveness-benefit-utility | Present | 46.2 | 46.2 |
| | | Pervious | 58.9 | 34.6 |

"In the questionnaire, two main questions are asked: (1) Are the current services satisfactory or not? (2) Are public health skills necessary or not to perform the tasks? Did you check the connection between results on current services and core skills?"

A Provincial Chief Medical Officer

Comparing outcomes from voting with findings from the mailed questionnaire respondents in Section 5.2 (Table-5.43) shows that:

The questionnaire findings favoured a Level of Mastery of Awareness for the Basic Public Health Skill No. 5 'Apply critical thinking' and the Policy Development Skill No. 4 'State the expected outcome of policy options'.

As shown in Table-5.43, the voting outcomes provided a clear viewpoint on the Level of Mastery required for 11 Skills for which questionnaire findings were indecisive.

Further, there were also 7 Skills for which perceptions on the Level of Mastery are different compared to questionnaire findings. Out of these 7 Skills, workshop participants considered a higher Level of Mastery for 6 Skills. Only for 1 Operational Management Skill No. 3 'Apply budget processes' workshop participants considered Awareness while questionnaire respondents expected Knowledgeable.

Only for Basic Public Health Skill No. 8 'Apply risk assessment' voting and questionnaire findings were not decisive.

Table-5.43: Frequencies and Proportions on Present and Previous Not Core vs. Core Skills and If Core Skill Required Level of Mastery for Front-line Staff

| Competency Domain & Skill No | Public Health Skill | Workshop vs. Questionnaire Professionals | Not Core | | Core | | Awareness | | Knowledgeable | | Proficiency | |
|------------------------------|---|--|----------|------|------|-------|-----------|------|---------------|------|-------------|------|
| | | | # | % | # | % | # | % | # | % | # | % |
| 1.2 | Use basic research designs and methods. | Present | 0 | 0.0 | 13 | 100.0 | 2 | 15.4 | 11 | 84.6 | 0 | 0.0 |
| | | Previous | 1 | 0.8 | 118 | 99.2 | 35 | 29.4 | 71 | 60.2 | 12 | 10.2 |
| 1.5 | Apply critical thinking. | Present | 0 | 0.0 | 13 | 100.0 | 5 | 38.5 | 5 | 38.5 | 3 | 23.1 |
| | | Previous | 14 | 11.8 | 105 | 88.2 | 31 | 50.0 | 29 | 46.8 | 2 | 3.2 |
| 1.7 | Identify limitations of research. | Present | 1 | 7.7 | 12 | 92.3 | 3 | 25.0 | 9 | 75.0 | 0 | 0.0 |
| | | Previous | 17 | 14.2 | 102 | 85.7 | 60 | 58.8 | 33 | 32.4 | 9 | 8.8 |
| 1.8 | Apply risk assessment. | Present | 0 | 0.0 | 13 | 100.0 | 4 | 30.8 | 5 | 38.5 | 4 | 30.8 |
| | | Previous | 14 | 11.8 | 105 | 88.2 | 43 | 41.0 | 43 | 41.0 | 19 | 18.1 |
| 1.9 | Use public health information packages. | Present | 1 | 7.7 | 12 | 92.3 | 1 | 8.3 | 10 | 83.3 | 1 | 8.3 |
| | | Previous | 17 | 14.3 | 102 | 85.7 | 44 | 43.1 | 39 | 38.2 | 19 | 18.6 |
| 2.3 | Select and define variables. | Present | 0 | 0.0 | 13 | 100.0 | 2 | 15.4 | 9 | 69.2 | 2 | 15.4 |
| | | Previous | 7 | 5.9 | 112 | 94.1 | 43 | 38.4 | 56 | 50.0 | 13 | 11.6 |
| 2.4 | Use basic research designs and methods. | Present | 0 | 0.0 | 13 | 100.0 | 3 | 23.1 | 10 | 83.3 | 0 | 0.0 |
| | | Previous | 10 | 8.4 | 109 | 91.6 | 48 | 44.0 | 50 | 45.9 | 11 | 10.1 |
| 2.6 | Use appropriate data collection. | Present | 1 | 7.7 | 12 | 92.3 | 3 | 25.0 | 6 | 50.0 | 3 | 25.0 |
| | | Previous | 6 | 5.0 | 113 | 95.0 | 31 | 27.4 | 60 | 53.1 | 22 | 19.5 |
| 2.11 | Illuminate issues from data. | Present | 1 | 7.7 | 12 | 92.3 | 7 | 58.3 | 5 | 41.7 | 0 | 0.0 |
| | | Previous | 17 | 14.3 | 102 | 85.7 | 50 | 49.0 | 44 | 43.1 | 8 | 7.8 |

Table-5.43: Frequencies and Proportions on Present and Previous Not Core vs. Core Skills and if Core Skill Required Level of Mastery for Front-line Staff (Cont.)

| Competency Domain & Skill No | Public Health Skill | Workshop vs. Questionnaire Professionals | Not Core | | Core | | Awareness | | Knowledgeable | | Proficiency | |
|------------------------------|--|--|----------|------|------|-------|-----------|------|---------------|------|-------------|------|
| | | | # | % | # | % | # | % | # | % | # | % |
| 3.1 | Collect, summarise and interpret information. | Present | 0 | 0.0 | 13 | 100.0 | 2 | 15.4 | 8 | 61.5 | 3 | 23.1 |
| | | Previous | 8 | 6.7 | 111 | 93.3 | 50 | 45.0 | 53 | 47.7 | 8 | 7.2 |
| 3.2 | State policy options. | Present | 4 | 30.8 | 9 | 69.2 | 7 | 77.8 | 2 | 22.2 | 0 | 0.0 |
| | | Previous | 13 | 10.9 | 106 | 89.1 | 62 | 58.5 | 41 | 38.7 | 3 | 2.8 |
| 3.4 | State the expected outcome of policy options. | Present | 3 | 23.1 | 10 | 76.9 | 5 | 50.0 | 5 | 50.0 | 0 | 0.0 |
| | | Previous | 11 | 9.2 | 108 | 90.8 | 63 | 58.3 | 42 | 38.9 | 3 | 2.8 |
| 3.6 | Utilise current techniques in analysis and planning. | Present | 3 | 23.1 | 10 | 76.9 | 2 | 20.0 | 7 | 70.0 | 1 | 10.0 |
| | | Previous | 11 | 9.2 | 108 | 90.8 | 49 | 45.4 | 51 | 47.2 | 8 | 7.4 |
| 3.7 | Identify policies for specific programs. | Present | 1 | 7.7 | 12 | 92.3 | 2 | 16.7 | 9 | 75.0 | 1 | 8.3 |
| | | Previous | 16 | 13.4 | 103 | 86.6 | 51 | 49.5 | 48 | 46.6 | 4 | 3.9 |
| 5.2 | Develop plans. | Present | 0 | 0.0 | 13 | 100.0 | 0 | 0.0 | 9 | 69.2 | 4 | 30.8 |
| | | Previous | 12 | 10.1 | 107 | 89.9 | 51 | 47.7 | 47 | 43.9 | 9 | 8.4 |
| 5.3 | Translate policy into organisational plans. | Present | 1 | 7.7 | 12 | 92.3 | 0 | 0.0 | 9 | 75.0 | 3 | 25.0 |
| | | Previous | 11 | 9.2 | 108 | 90.8 | 58 | 53.7 | 40 | 37.0 | 10 | 9.3 |
| 5.4 | Monitor and evaluate programs. | Present | 1 | 7.7 | 12 | 92.3 | 2 | 16.7 | 10 | 83.3 | 0 | 0.0 |
| | | Previous | 13 | 10.9 | 106 | 89.1 | 57 | 53.8 | 42 | 39.6 | 7 | 6.6 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | Present | 0 | 0.0 | 13 | 100.0 | 6 | 46.2 | 6 | 46.2 | 1 | 7.7 |
| | | Previous | 12 | 10.0 | 107 | 89.9 | 63 | 58.9 | 37 | 34.6 | 7 | 6.5 |

Table-5.43: Frequencies and Proportions on Present and Previous Not Core vs. Core Skills and if Core Skill Required Level of Mastery for Front-line Staff (Cont.)

| Competency Domain & Skill No | Public Health Skill | Workshop vs. Questionnaire Professionals | Not Core | | Core | | Awareness | | Knowledgeable | | Proficiency | |
|------------------------------|---|--|----------|------|------|-------|-----------|-------|---------------|------|-------------|------|
| | | | # | % | # | % | # | % | # | % | # | % |
| | | | | | | | | | | | | |
| 5.6 | Apply theory of organisation. | Present | 2 | 15.4 | 11 | 84.6 | 3 | 27.3 | 8 | 72.7 | 0 | 0.0 |
| | | Previous | 11 | 9.3 | 108 | 90.8 | 61 | 56.5 | 41 | 38.0 | 6 | 5.6 |
| 5.7 | Contribute to organisational performance standards. | Present | 1 | 7.7 | 12 | 92.3 | 2 | 16.7 | 8 | 66.7 | 2 | 16.7 |
| | | Previous | 12 | 10.0 | 107 | 89.9 | 57 | 53.3 | 45 | 42.1 | 5 | 4.7 |
| 5.8 | Promote team learning and organisation learning. | Present | 1 | 7.7 | 12 | 92.3 | 0 | 0.0 | 10 | 83.3 | 2 | 16.7 |
| | | Previous | 6 | 5.0 | 113 | 95.0 | 50 | 44.2 | 53 | 46.9 | 10 | 8.8 |
| 6.3 | Advocate for public health. | Present | 10 | 76.9 | 3 | 23.1 | 3 | 100.0 | 0 | 0.0 | 0 | 0.0 |
| | | Previous | 13 | 10.9 | 106 | 89.1 | 39 | 36.8 | 61 | 57.5 | 6 | 5.7 |
| 6.4 | Lead and participate in-groups. | Present | 1 | 7.7 | 12 | 92.3 | 1 | 8.3 | 7 | 58.3 | 4 | 33.3 |
| | | Previous | 9 | 7.6 | 110 | 92.4 | 26 | 23.6 | 69 | 62.7 | 15 | 13.6 |
| 7.4 | Use management skills to build partnerships. | Present | 1 | 7.7 | 12 | 92.3 | 1 | 8.3 | 8 | 66.7 | 3 | 25.0 |
| | | Previous | 4 | 3.3 | 115 | 96.6 | 41 | 35.7 | 55 | 47.8 | 19 | 16.5 |
| 8.3 | Apply budget processes. | Present | 1 | 7.7 | 12 | 92.3 | 8 | 66.7 | 4 | 33.3 | 0 | 0.0 |
| | | Previous | 9 | 7.6 | 110 | 92.4 | 42 | 38.2 | 55 | 50.0 | 13 | 11.8 |
| 8.5 | Monitor program performance. | Present | 2 | 15.4 | 11 | 84.6 | 5 | 45.5 | 6 | 54.5 | 0 | 0.0 |
| | | Previous | 13 | 11.0 | 106 | 89.1 | 44 | 41.5 | 49 | 46.2 | 13 | 12.3 |
| 8.6 | Develop proposals for funding. | Present | 0 | 0.0 | 13 | 100.0 | 3 | 23.1 | 7 | 53.8 | 3 | 23.1 |
| | | Previous | 11 | 9.3 | 108 | 90.8 | 42 | 38.9 | 50 | 46.3 | 16 | 14.8 |

c. Out of 5 Skills for Mid-level Management Staff, which are Not Core and if Core what Level of Mastery would be Required?

As presented in Table-5.44, all participants considered all of the 5 Skills for Mid-level Management Staff as Core Skills. The expected Level of Mastery is clearly being Knowledgeable for 3 Skills, while for the following 2 Skills there was a difference in opinion as whether to consider being Knowledgeable or Proficiency:

| Competency Domain | Skill # and Description | Present vs. Previous | Knowledgeable % | Proficiency % |
|-------------------------------|---------------------------------------|----------------------|-----------------|---------------|
| 1. Basic Public Health Skills | 3. Apply basic public health sciences | Present | 46.2 | 46.2 |
| | | Previous | 45.1 | 41.6 |
| | 7. Identify limitations or research | Present | 30.8 | 46.2 |
| | | Previous | 45.6 | 31.6 |

Comparing outcomes from voting with findings from the mailed questionnaire described in Section-5.2 (Table-5.44) showed that:

The workshop findings confirmed a Level of Mastery of Knowledgeable for the Policy Development Skill No. 2 'State policy options' and 'State the expected outcome of policy options'.

Further, workshop outcomes provided a clear viewpoint on the Level of Mastery required for the Basic Public Health Skill No. 6 'Identify and access scientific evidence'.

Only for two Basic Public Health Skills No. 3 'Apply basic public health sciences' and No. 7 'Identify limitations of research', voting and questionnaire findings were not decisive.

Table-5.44: Frequencies and Proportions on Present and Previous Not Core vs. Core Skills and if Core Skill Required Level of Mastery for Mid-level Management Staff

| Competency Domain & Skill No | Public Health Skill | Workshop vs. Questionnaire Professionals | Not Core | | Core | | Awareness | | Knowledge able | | Proficiency | |
|------------------------------|--|--|----------|-----|------|-------|-----------|------|----------------|------|-------------|------|
| | | | # | % | # | % | # | % | # | % | # | % |
| 1.3 | Apply basic public health sciences. | Present | 0 | 0.0 | 13 | 100.0 | 1 | 7.7 | 6 | 46.2 | 6 | 46.2 |
| | | Previous | 6 | 5.0 | 113 | 95.0 | 15 | 13.3 | 51 | 45.1 | 47 | 41.6 |
| 1.6 | Identify and access current scientific evidence. | Present | 0 | 0.0 | 13 | 100.0 | 2 | 15.4 | 7 | 53.8 | 4 | 30.1 |
| | | Previous | 6 | 5.0 | 113 | 95.0 | 22 | 19.5 | 54 | 47.8 | 37 | 32.7 |
| 1.7 | Identify limitations of research. | Present | 0 | 0.0 | 13 | 100.0 | 3 | 23.1 | 4 | 30.8 | 6 | 46.2 |
| | | Previous | 5 | 4.2 | 114 | 95.8 | 26 | 22.8 | 52 | 45.6 | 36 | 31.6 |
| 3.2 | State policy options. | Present | 0 | 0.0 | 13 | 100.0 | 0 | 0.0 | 11 | 84.6 | 2 | 15.4 |
| | | Previous | 3 | 2.5 | 116 | 97.5 | 12 | 10.3 | 77 | 66.4 | 27 | 23.3 |
| 3.4 | State the expected outcome of policy options. | Present | 0 | 0.0 | 13 | 100.0 | 1 | 7.7 | 9 | 69.2 | 3 | 23.1 |
| | | Previous | 4 | 3.3 | 115 | 96.6 | 12 | 10.4 | 80 | 69.6 | 23 | 20.0 |

d. Out of 5 Skills for Top-level Management Staff, which are Not Core and if Core what Level of Mastery would be Required?

As presented in Table-5.45, all participants considered all of the 5 Skills for Top-level Management Staff as Core Skills. The expected Level of Mastery was clearly being Knowledgeable for 2 Skills, while for the following 3 Skills there was difference in opinion as whether to consider being Awareness or Knowledgeable:

| Competency Domain | Skill # and Description | Present vs. Previous | Knowledgeable % | Proficiency % |
|-------------------------------|-------------------------------------|----------------------|-----------------|---------------|
| 1. Basic Public Health Skills | 10. Design a surveillance system. | Present | 38.5 | 46.2 |
| | | Previous | 53.3 | 27.1 |
| | 11. Operate a surveillance system. | Present | 38.5 | 38.5 |
| | | Previous | 58.5 | 18.9 |
| 2. Analytical Skills | 6. Use appropriate data collection. | Present | 46.2 | 46.2 |
| | | Previous | 55.7 | 21.7 |

Comparing outcomes from voting with findings from the mailed questionnaire described in Section 5.2 (Table-5.45) showed that:

The workshop findings confirmed a Level of Mastery of Knowledgeable for the Analytic Skill 'Partner with communities'.

Further, participants considered the required Level of Mastery as Knowledgeable for the Basic Public Health Skill No. 6 'Identify and access scientific evidence'.

Questionnaire findings provided a clear viewpoint on the Level of Mastery required (Knowledgeable) for the Basic Public Health Skills No. 10 'Design a surveillance system' and No. 11 'Operate a surveillance system' as well as for the Analytic Skill No. 6 'Use appropriate data collection'.

Table-5.45: Frequencies and Proportions on Present and Previous Not Core vs. Core Skills and if Core Skill Required Level of Mastery for Top-level Management Staff

| Competency Domain & Skill No | Public Health Skill | Workshop vs. Questionnaire Professionals | Not Core | | Core | | Awareness | | Knowledgeable | | Proficiency | |
|------------------------------|--|--|----------|------|------|-------|-----------|------|---------------|------|-------------|------|
| | | | # | % | # | % | # | % | # | % | # | % |
| 1.6 | Identify and access current scientific evidence. | Present | 0 | 0.0 | 13 | 100.0 | 2 | 15.4 | 9 | 69.2 | 2 | 15.4 |
| | | Previous | 8 | 6.7 | 111 | 93.3 | 16 | 14.4 | 54 | 48.6 | 41 | 36.9 |
| 1.10 | Design a surveillance system. | Present | 0 | 0.0 | 13 | 100.0 | 5 | 38.5 | 6 | 46.2 | 2 | 15.4 |
| | | Previous | 12 | 10.1 | 107 | 89.9 | 21 | 19.6 | 57 | 53.3 | 29 | 27.1 |
| 1.11 | Operate a surveillance system. | Present | 0 | 0.0 | 13 | 100.0 | 5 | 38.5 | 5 | 38.5 | 3 | 23.1 |
| | | Previous | 13 | 11.0 | 106 | 89.1 | 24 | 22.6 | 62 | 58.5 | 20 | 18.9 |
| 2.5 | Partner with communities. | Present | 0 | 0.0 | 13 | 100.0 | 0 | 0.0 | 8 | 61.5 | 5 | 38.5 |
| | | Previous | 12 | 10.0 | 107 | 89.9 | 18 | 16.8 | 57 | 53.3 | 32 | 29.9 |
| 2.6 | Use appropriate data collection. | Present | 0 | 0.0 | 13 | 100.0 | 6 | 46.2 | 6 | 46.2 | 1 | 7.7 |
| | | Previous | 13 | 10.9 | 106 | 89.1 | 24 | 22.6 | 59 | 55.7 | 23 | 21.7 |

e. Comparison between Provincial Chief Medical Officers and Provincial Health Office Representatives

Because provincial participants had different positions, i.e. 7 were Provincial Chief Medical Officers and 5 were representatives of Provincial Health Offices, further analysis was applied for these participant groups to explore eventual variations in perspectives. As shown in Table-5.46, based on the distribution of proportions, the viewpoints of both groups did not differ in deciding whether Skills were Not Core or Core Skills.

However, as presented in Table-5.47, when considering the expected Level of Mastery for Core Skills, based on a comparison of means, there were a few differences in viewpoints between both groups for specific Skills for Front-line and Top-level Management Staff as follows:

Front-line staff

| Skill No. | Description | PCMO | PHO Rep. |
|-----------|--|---------------|---------------|
| 1.5 | Apply critical thinking. | Knowledgeable | Awareness |
| 3.4 | State the expected outcome of policy options. | Awareness | Knowledgeable |
| 5.5 | Conduct cost-effectiveness-benefit-utility analysis. | Knowledgeable | Awareness |
| 8.6 | Develop proposals for funding. | Knowledgeable | Proficiency |

Top-level Management Staff

| Skill No. | Description | PCMO | PHO Rep. |
|-----------|----------------------------------|-----------|---------------|
| 1.11 | Operate a surveillance system. | Awareness | Proficient |
| 2.6 | Use appropriate data collection. | Awareness | Knowledgeable |

Table-5.46: Frequencies and Proportions on Core vs. Not Core Public Health Skills as Considered by PCMO and PHO Representatives

| Competency Domain & Skill No. | Skill Description | PCMO | | | | | PHO Representatives | | | | |
|-------------------------------|--|----------|------|------|-------|-------|---------------------|------|------|-------|-------|
| | | Not Core | | Core | | Total | Not Core | | Core | | Total |
| | | # | % | # | % | # | # | % | # | % | # |
| | Front-line Staff | | | | | | | | | | |
| 1.2 | Use basic research designs and methods. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.5 | Apply critical thinking. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.7 | Identify limitations of research. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.8 | Apply risk assessment. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.9 | Use public health information packages. | 0 | 0.0 | 7 | 100.0 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 2.3 | Select and define variables. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 2.4 | Use basic research designs and methods. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 2.6 | Use appropriate data collection. | 0 | 0.0 | 7 | 100.0 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 2.11 | Illuminate issues from data. | 0 | 0.0 | 7 | 100.0 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 3.1 | Collect, summarise and interpret information. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 3.2 | State policy options. | 2 | 28.6 | 5 | 71.4 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 3.4 | State the expected outcome of policy options. | 1 | 14.3 | 6 | 85.7 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 3.6 | Utilise current techniques in analysis and planning. | 2 | 28.6 | 5 | 71.4 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 3.7 | Identify policies for specific programs. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 5.2 | Develop plans. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 5.3 | Translate policy into organisational plans. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 5.4 | Monitor and evaluate programs. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 5.6 | Apply theory of organisation. | 1 | 14.3 | 6 | 85.7 | 7 | 1 | 20.0 | 4 | 80.0 | 5 |
| 5.7 | Contribute to organisational performance standards. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |

Table-5.46: Frequencies and Proportions on Core vs. Not Core Public Health Skills as Considered by PCMO and PHO Representatives
(Cont.)

| Competency Domain & Skill No. | Skill Description | PCMO | | | | | PHO Representatives | | | | |
|----------------------------------|---|----------|------|------|-------|-------|---------------------|------|------|-------|-------|
| | | Not Core | | Core | | Total | Not Core | | Core | | Total |
| | | # | % | # | % | # | # | % | # | % | # |
| 5.8 | Promote team learning and organisation learning. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 6.3 | Advocate for public health. | 6 | 85.7 | 1 | 14.3 | 7 | 3 | 60.0 | 2 | 40.0 | 5 |
| 6.4 | Lead and participate in-groups. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 7.4 | Use management skills to build partnerships. | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 8.1 | Apply budget processes | 1 | 14.3 | 6 | 85.7 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 8.5 | Monitor program performance. | 2 | 28.6 | 5 | 71.4 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 8.6 | Develop proposals for funding. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| | Mid-level Management Staff | | | | | | | | | | |
| 1.3 | Apply basic public health sciences. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.6 | Identify and access current relevant scientific evidence. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.7 | Identify limitations of research. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 3.2 | State policy options. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 3.4 | State the expected outcome of policy options. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| | Top-level Management Staff | | | | | | | | | | |
| 1.6 | Identify and access relevant scientific evidence. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.10 | Design a surveillance system. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 1.11 | Operate a surveillance system. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 2.5 | Partner with communities. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |
| 2.6 | Use appropriate data collection. | 0 | 0.0 | 7 | 100.0 | 7 | 0 | 0.0 | 5 | 100.0 | 5 |

Table-5.47: Frequencies and Proportions on the Level of Mastery for Core Public Health Skills as Considered by PCMO and PHO Representatives

| Competency Domain & Skill No. | Skill Description | PCMO | | | | | | | PHO Representatives | | | | | | |
|-------------------------------|--|-----------|------|---------------|-------|-------------|------|-----------|---------------------|-------|---------------|-------|-------------|------|-----------|
| | | Awareness | | Knowledgeable | | Proficiency | | \bar{x} | Awareness | | Knowledgeable | | Proficiency | | \bar{x} |
| | | # | % | # | % | # | % | | # | % | # | % | # | % | |
| | Front-line Staff | | | | | | | | | | | | | | |
| 1.2 | Use basic research designs and methods used in public health. | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 2.00 | 2 | 40.0 | 3 | 60.0 | 0 | 0.0 | 1.60 |
| 1.5 | Apply critical thinking. | 2 | 28.6 | 3 | 42.9 | 2 | 28.6 | 2.00 | 3 | 60.0 | 1 | 20.0 | 1 | 20.0 | 1.60 |
| 1.7 | Identify limitations of research. | 2 | 28.6 | 5 | 71.4 | 0 | 0.0 | 1.71 | 1 | 20.0 | 4 | 80.0 | 0 | 0.0 | 1.80 |
| 1.8 | Apply risk assessment. | 2 | 28.6 | 2 | 28.6 | 3 | 42.9 | 2.14 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |
| 1.9 | Use public health information packages. | 1 | 14.3 | 5 | 71.4 | 1 | 14.3 | 2.00 | 0 | 0.0 | 4 | 100.0 | 0 | 0.0 | 2.00 |
| 2.3 | Select and define variables. | 0 | 0.0 | 6 | 85.7 | 1 | 14.3 | 2.14 | 2 | 40.0 | 2 | 40.0 | 1 | 20.0 | 1.80 |
| 2.4 | Use basic research designs and methods applied in public health. | 1 | 14.3 | 6 | 85.7 | 0 | 0.0 | 1.86 | 2 | 40.0 | 3 | 60.0 | 0 | 0.0 | 1.60 |
| 2.6 | Use appropriate data collection. | 2 | 28.6 | 3 | 42.9 | 2 | 28.6 | 2.00 | 1 | 25.0 | 2 | 50.0 | 1 | 25.0 | 2.00 |
| 2.11 | Illuminate issues from data. | 4 | 57.1 | 3 | 42.9 | 0 | 0.0 | 1.43 | 2 | 50.0 | 2 | 50.0 | 0 | 0.0 | 1.50 |
| 3.1 | Collect, summarise and interpret information. | 1 | 14.3 | 4 | 57.1 | 2 | 28.6 | 2.14 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |
| 3.2 | State policy options. | 3 | 60.0 | 2 | 40.0 | 0 | 0.0 | 1.40 | 4 | 100.0 | 0 | 0.0 | 0 | 0.0 | 1.00 |
| 3.4 | State the expected outcome of policy options. | 4 | 66.7 | 2 | 33.3 | 0 | 0.0 | 1.33 | 1 | 25.0 | 3 | 75.0 | 0 | 0.0 | 1.75 |
| 3.6 | Utilise current techniques in analysis and planning. | 0 | 0.0 | 5 | 100.0 | 0 | 0.0 | 2.00 | 2 | 40.0 | 2 | 40.0 | 1 | 20.0 | 1.80 |
| 3.7 | Identify policies for specific programs. | 1 | 14.3 | 5 | 71.4 | 1 | 14.3 | 2.00 | 1 | 20.0 | 4 | 80.0 | 0 | 0.0 | 1.80 |
| 5.2 | Develop plans. | 0 | 0.0 | 4 | 57.1 | 3 | 42.9 | 2.43 | 0 | 0.0 | 4 | 80.0 | 1 | 20.0 | 2.20 |
| 5.3 | Translate policy into organisational plans. | 0 | 0.0 | 4 | 66.7 | 2 | 33.3 | 2.33 | 0 | 0.0 | 4 | 80.0 | 1 | 20.0 | 2.20 |
| 5.4 | Monitor and evaluate programs. | 1 | 16.7 | 5 | 83.3 | 0 | 0.0 | 1.83 | 1 | 20.0 | 4 | 80.0 | 0 | 0.0 | 1.80 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 2 | 28.6 | 5 | 71.4 | 0 | 0.0 | 1.71 | 3 | 60.0 | 1 | 20.0 | 1 | 20.0 | 1.60 |

Table-5.47: Frequencies and Proportions on the Level of Mastery for Core Public Health Skills as Considered by PCMO and PHO Representatives (Cont.)

| Competency Domain & Skill No. | Skill Description | PCMO | | | | | | | PHO Representatives | | | | | | |
|-------------------------------|---|-----------|------|---------------|------|-------------|------|-----------|---------------------|------|---------------|-------|-------------|------|-----------|
| | | Awareness | | Knowledgeable | | Proficiency | | | Awareness | | Knowledgeable | | Proficiency | | |
| | | # | % | # | % | # | % | \bar{x} | # | % | # | % | # | % | \bar{x} |
| 5.6 | Apply theory of organisation. | 1 | 16.7 | 5 | 83.3 | 0 | 0.0 | 1.83 | 1 | 25.0 | 3 | 75.0 | 0 | 0.0 | 1.75 |
| 5.7 | Contribute to organisational performance standards. | 1 | 16.7 | 5 | 83.3 | 0 | 0.0 | 1.83 | 0 | 0.0 | 3 | 60.0 | 2 | 40.0 | 2.40 |
| 5.8 | Promote team learning and organisation learning. | 0 | 0.0 | 4 | 66.7 | 2 | 33.3 | 2.33 | 0 | 0.0 | 5 | 100.0 | 0 | 0.0 | 2.00 |
| 6.4 | Lead and participate in-groups. | 0 | 0.0 | 4 | 66.7 | 2 | 33.3 | 2.33 | 0 | 0.0 | 3 | 60.0 | 2 | 40.0 | 2.40 |
| 7.4 | Use management skills to build partnerships. | 0 | 0.0 | 5 | 83.3 | 1 | 16.7 | 2.17 | 0 | 0.0 | 3 | 60.0 | 2 | 40.0 | 2.40 |
| 8.1 | Apply budget processes | 4 | 66.7 | 2 | 33.3 | 0 | 0.0 | 1.33 | 3 | 60.0 | 2 | 40.0 | 0 | 0.0 | 1.40 |
| 8.5 | Monitor program performance. | 2 | 40.0 | 3 | 60.0 | 0 | 0.0 | 1.60 | 2 | 40.0 | 3 | 60.0 | 0 | 0.0 | 1.60 |
| 8.6 | Develop proposals for funding. | 1 | 14.3 | 6 | 85.7 | 0 | 0.0 | 1.86 | 1 | 20.0 | 1 | 20.0 | 3 | 60.0 | 2.40 |
| | Mid-level Management Staff | | | | | | | | | | | | | | |
| 1.3 | Apply basic public health sciences. | 0 | 0.0 | 4 | 57.1 | 3 | 42.9 | 2.43 | 1 | 20.0 | 1 | 20.0 | 3 | 60.0 | 2.40 |
| 1.6 | Identify and access current relevant scientific evidence. | 1 | 14.3 | 4 | 57.1 | 2 | 28.6 | 2.14 | 1 | 20.0 | 2 | 40.0 | 2 | 40.0 | 2.20 |
| 1.7 | Identify limitations of research. | 2 | 28.6 | 2 | 28.6 | 3 | 42.9 | 2.14 | 1 | 20.0 | 1 | 20.0 | 3 | 60.0 | 2.40 |
| 3.2 | State policy options. | 0 | 0.0 | 6 | 85.7 | 1 | 14.3 | 2.14 | 0 | 0.0 | 4 | 80.0 | 1 | 20.0 | 2.20 |
| 3.4 | State the expected outcome of policy options. | 0 | 0.0 | 5 | 71.4 | 2 | 28.6 | 2.29 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |
| | Top-level Management Staff | | | | | | | | | | | | | | |
| 1.6 | Identify and access current relevant scientific evidence. | 1 | 14.3 | 5 | 71.4 | 1 | 14.3 | 2.00 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |
| 1.10 | Design a surveillance system. | 3 | 42.9 | 3 | 42.9 | 1 | 14.3 | 1.71 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |
| 1.11 | Operate a surveillance system. | 3 | 42.9 | 4 | 57.1 | 0 | 0.0 | 1.57 | 1 | 20.0 | 1 | 20.0 | 3 | 60.0 | 2.40 |
| 2.5 | Partner with communities. | 0 | 0.0 | 5 | 71.4 | 2 | 28.6 | 2.29 | 0 | 0.0 | 3 | 60.0 | 2 | 40.0 | 2.40 |
| 2.6 | Use appropriate data collection. | 4 | 57.1 | 3 | 42.9 | 0 | 0.0 | 1.43 | 1 | 20.0 | 3 | 60.0 | 1 | 20.0 | 2.00 |

7. Linking Public health Practices with Services and Services with Competencies

a. Exploring Relationships between Public Health Practices and Services

1) What Public Health Practices will affect which of the Public health Services?

Although some participants pointed out that a detailed study would probably reveal that all Services are affected, directly or indirectly, by most if not all Practices, the panel agreed that it would be useful for curriculum development if key relationships and their nature were described. Table-5.43 presents the outcome of the discussion on what Practices would affect which of the Services.

Although Practices might vary in terms of importance as well as in terms of the complexity of the change process involved the frequencies of relationships between Practices and Services may indicate a degree of importance for curriculum development.

The Practice 'Health Promotion' was considered to affect all Services. Three Practices affected 7 to 8 Services, these were, 'Health Insurance', 'Decentralisation' and 'Develop Primary Care'. Six Practices affected 4 to 5 Services, these were, 'Equity', 'System Reform', 'Civil Society Capability', 'Quality of Services', 'Research and Development' and 'Develop Health Industry'.

Looking at the Services, one can see that 'Assure Human Resources' was most frequently affected by the Practices. This Service is followed by 'Partnerships', 'Policy Development' and 'Planning and Management' affected by 7 to 8 Practices respectively. The Services 'Disseminate Information', 'Enforce Laws' and 'Access to Services' were moderately affected in terms of frequency, while 'Monitor', 'Diagnose and Investigate', 'Evaluation' and 'Research' were less frequently affected by the Practices.

Table-5.48: Consensus of Panel Members on Public Health Practices Affecting Public Health Services

| Public Health Services | | Public Health Practices for Thailand | | | | | | | | | | |
|------------------------|-------------------------|--------------------------------------|------------------|----------|---------------|------------------|--------------------------|----------------------|---------------------|------------------------|-------------------------|------------------------------|
| | | Health Promotion | Health Insurance | Equality | System Reform | Decentralisation | Civil Society Capability | Develop Primary Care | Quality of Services | Research & Development | Develop Health Industry | # Goals Affecting a Practice |
| No | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1 | Monitor | ✓ | ✓ | | | ✓ | ✓ | | | | | 4 |
| 2 | Diagnose & Investigate | ✓ | | | | | | ✓ | | | | 2 |
| 3 | Disseminate Information | ✓ | | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 6 |
| 4 | Partnerships | ✓ | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | 7 |
| 5 | Policy Development | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | 8 |
| 6 | Enforce Laws | ✓ | ✓ | ✓ | | ✓ | | | ✓ | | | 5 |
| 7 | Access to Services | ✓ | ✓ | ✓ | | ✓ | | ✓ | | | | 5 |
| 8 | Assure Human Resources | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 9 |
| 9 | Evaluation | ✓ | ✓ | | | | | | ✓ | | | 3 |
| 10 | Research | ✓ | | | | | | | | ✓ | ✓ | 3 |
| 11 | Planning & Management | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | 8 |
| | # Services Affected | 11 | 7 | 5 | 4 | 8 | 4 | 7 | 5 | 5 | 4 | |

2) How will Public Health Practices affect the Public Health Services?

Table-5.44 presents the consensus of panel members on the key elements in the nature of the inter-relationships between each of the Practices with each of the Services.

The main effects on each of the Services can be summarised as follows:

a) *Monitor*

With 'Health Promotion', 'Monitor population's health status' will have to extend its purpose and needs to include monitoring of health promotion interventions.

'Health Insurance' will create demands on monitoring short-term effects of the universal coverage scheme by screening prevention and control and referring rates of certain diseases.

With 'Decentralisation' external users will appear, which in turn may demand that monitoring systems and their outcomes need to be accessible for these users.

With improving 'Civil Society Capability', self-monitoring of health conditions will have to be developed.

b) Diagnose and Investigate

'Health Promotion' requires the purpose of 'Diagnose and Investigate' to include the development of health promotion interventions and the approach to health assessment will have to be extended to the primary care level.

c) Disseminate Information

With 'Health Promotion', the need to focus on advocating health promotion using locally appropriate channels will be created.

'Equity' demands good public relations and advocating health to protect vulnerable groups.

Because of the 'Decentralisation' process, special attention will be needed for transparency and accuracy in dissemination of information.

Fostering 'Civil Society Capability' requires, then, a focus on local wisdom and interaction with the community.

'Disseminate Information' will have to adopt advocacy for traditional medicine and the 'Development of Primary Care' will direct the need for public relations and the use of appropriate channels.

d) Partnerships

In terms of 'Health Promotion', community networking will be a must with the aim to empower communities.

'Health Insurance' requires that co-payment strategies needs further development to assure health insurance coverage with public, private and NGO stakeholders.

'System Reform' and the 'Decentralisation' in managing public health will require a participatory approach in management by sharing ownership and develop people's organisation.

The development of service networking and multi-sector collaboration will be required to support the 'Development of Primary Care'.

'Partnerships' between academic, public and private stakeholders will be needed to ensure 'Research and Development'.

Academic, public and private 'Partnerships' were seen as conditional too for the 'Development of the Health Industry' in terms of traditional medicines.

e) Policy Development

'Health Promotion' requires provincial 'Policy Development' to include preventive, human rights and ecological policy development addressing vulnerable groups and protecting the population as a whole.

'Equity' requires 'Policy Development' to focus on vulnerable groups and protection of population health as a whole.

'System Reform' will shift the policy-making process to local levels and include new stakeholders. The process aims to be more bottom-up which requires community participation. Important for 'Policy Development' is that policy becomes translated into practice and that required resource is allocated to employ policies.

To improve 'Quality of Service', 'Policy Development' needs to address legislation of quality for public-private mix at the local level.

In terms of 'Research and Development', provincial 'Policy Development' should be committed to appropriate budget allocation for the national

research agenda, which aims to strengthen traditional and western medicine.

'Development of the Health Industry' requires more comprehensive approaches to support the development of traditional medicines.

f) Enforce Laws

'Health Promotion' calls for taxation, leadership, commitment and support and control to promote health.

Improvement of 'Health Insurance' coverage requires decree and legislation.

Addressing 'Equity' requires strategies to be developed to 'Enforce Laws' that address equity and regulations on the provision of health services.

'Decentralisation' will result in local 'Policy Development', which need support from 'Law Enforcement'. For example local administrators can decide to introduce additional taxes such as for petrol or cigarettes, which will require enforcement mechanisms to collect taxes.

Improving 'Quality of Services' is conditional to development of mechanisms and indicators to enforce the legislation of quality of services.

g) Access to services

With a focus on 'Health Promotion', improved coverage and availability of services is needed to support the promotion of health.

'Health Insurance' coverage requires the utilisation of services to be assessed in the context of health insurance coverage.

While improved service coverage can support Equity.

It is expected that 'Decentralisation' will positively affect 'Access to Services' for the local society.

Service delivery will have to develop new strategies and adopt Thai traditional medicine to improve 'Primary Care'. These required changes call for identification of health seeking behaviour.

h) Assure Human Resources

'Health Promotion' needs capacity building among human resources to develop and supervise health promotion interventions.

'Health Insurance' will create a demand for human resource capacity building at central and peripheral levels to be able to cover primary care units.

'System Reform' requires human resource development efforts to apply integrated strategies, because the role of the health system in producing human resources for public health needs to be transferred to others.

Capacity building needs to support 'Decentralisation'.

Service networks need to be developed with a focus on empowerment of partners in developing 'Civil Society Capacity'.

'Development of Primary Care' calls for a new type of physicians and para-medical staff. Care services need to shift from a patient (case) to a more holistic approach including bio-medical, mental and social aspects of illness.

Development of 'Quality Services' requires capacity building in health service delivery.

'Development and Research' requires locally applied research that needs to be supported by capacity building.

'Development of the Health Industry' needs 'Assuring Human Resources'. The Ministry of Tourism and Sport will collaborate closely with the MOPH to promote traditional Thai herbs massage and medicine. This will foster the development of spa-resorts for which human resource needs to be trained.

i) Evaluation

'Health Promotion' creates a need to build capacity in formative and summative evaluation for health promotion interventions.

'Health Insurance' schemes will need to be evaluated in order to judge successes and failures.

While the development of 'Quality Services' requires capacity need to be developed to monitor and evaluate quality performance of services.

j) Research

'Health Promotion' requires research at the provincial public health system level to be area-based action oriented and participatory for health promotion interventions.

'Research and Development' calls for research agendas to be developed at the provincial level including the identification of appropriate designs and methods.

'Developing Health Industry' requires applied research that serves development.

k) Planning and Management

'Health Promotion' needs the development of strategies and the provision of resources.

'Health Insurance' and financing systems will affect 'Planning and Management' of local health service facilities.

To address 'Equity', health resources need to be allocated.

'System Reform' and 'Decentralisation' will create demands for efficiency, integrated strategies and resource (re-) allocations in 'Planning and Management'.

'Decentralisation' will shift decision-making and allocation of resources to local levels.

To improve the 'Civil Society Capability', there is a need to develop information systems and support community building.

Local mapping and planning, appropriate budget allocation and monitoring capacity at the local operational level should support the 'Development of Primary Care'.

Attention for process and monitoring in planning and management should support 'Quality of Services'.

Table-5.49 Perceptions of Panel Members on How Public Health Practices will Affect, in broad terms, Public Health Services

| Public Health Services | Public Health Practices for Thailand 2002-2006 | | | | | | | | | |
|-----------------------------------|---|---|--|------------------------------------|---|---|---|---------------------|---|---|
| | Health Promotion | Health Insurance | Equality | System Reform | Decentralisation | Civil Society Capability | Develop Primary Care | Quality of Services | Research & Development | Develop Health Industry |
| Monitor | Requires an extension of the purpose to monitoring health promotion efforts | Requires monitoring of short term effects | | | Requires monitoring aspects to be accessible for external users | Requires self-monitoring of health conditions | | | | |
| Diagnose & Investigate | Requires an extension of the purpose to the development of health promotion interventions | | | | | | Requires adoption of health assessment approaches at primary care level | | | |
| Disseminate Information | Requires: Appropriate public relations channels & a focus on advocacy in health promotion | | Requires: Public relations Health advocacy | | Requires: transparency & accuracy in public information | Requires: Focus on local wisdom and interactive information | Requires appropriate public relations and the use of channels | | Calls for advocating traditional medicine | |
| Partnerships | Requires: Network with the community & a focus on empowerment | Requires: Development of co-payment and Public/Private/ NGO stakeholders strategies | | Requires: Participatory management | Requires: Peoples organisation | | Requires: Networking in primary care Development of service networks & Multi-sector collaboration | | Requires academic, public and private sector partnerships | Requires academic, public and private sector partnerships |

Table-5.49 Perceptions of Panel Members on How Public Health Practices will Affect, in broad terms, Public Health Services (Cont.)

| Public Health Services | Public Health Practices for Thailand 2002-2006 | | | | | | | | | |
|---------------------------|---|--|--|---|--|--------------------------|---|--|--|--|
| | Health Promotion | Health Insurance | Equality | System Reform | Decentralisation | Civil Society Capability | Develop Primary Care | Quality of Services | Research & Development | Develop Health Industry |
| Policy Development | Requires focus on: Preventive policy Human rights & Ecology | | Requires local policy to focus on vulnerable groups and protection of population health | Requires a shift in the policy making process and a shift in stakeholders | Requires accountability, a bottom-up process and community participation | | Requires: Translation of policy into practice & Resource allocation | Requires: Legislation of quality for public/private mix at local level | Requires commitment in budget allocation for national research agenda Creates a need to strengthen traditional & western medicine | Requires more comprehensive approaches in policy development |
| Enforce Laws | Requires: Taxation Leadership Commitment Support & Control | Requires Decree & Legislation | Requires: Strategy development for law enforcement & Regulations on provision of health services | | Requires local policy enforcement mechanisms | | | Requires: Development of a mechanism & indicators to enforce legislation | | |
| Access to Services | Requires increased and improved coverage and availability of services | Requires increased coverage & Assessment of utilisation | Requires: Increased coverage | | Requires improved access to services within local society | | Requires change in strategies to deliver services Needs adoption of Thai traditional medicine Requires identification of health seeking behaviour | | | |

Table-5.49 Perceptions of Panel Members on How Public Health Practices will Affect, in broad terms, Public Health Services (Cont.)

| Public Health Services | Public Health Practices for Thailand 2002-2006 | | | | | | | | | |
|----------------------------------|--|--|------------------------------|--|---|--|---|--|--|---|
| | Health Promotion | Health Insurance | Equality | System Reform | Decentralisation | Civil Society Capability | Develop Primary Care | Quality of Services | Research & Development | Develop Health Industry |
| Assure Human Resources | Requires: Capacity building & Supervision | Requires PCU capacity building | | Requires Integrated strategies in HRD Transfer roles to others for production of HR | Requires capacity building | Requires network development and a focus on empowerment | Requires a new type of health professionals that apply a holistic approach | Requires capacity building in health care service delivery | Calls for capacity building in research | Requires the production of staff with skills in Thai traditional treatments |
| Evaluation | Requires focus on formative & summative evaluation | Requires formative and summative evaluations | | | | | | Requires performance monitoring | | |
| Research | Requires research to be: Area based Action research Participatory | | | | | | | | Requires a research agenda and identification of appropriate methodologies | Requires applied research with a focus on research for development |
| Planning & Management | Requires allocation of: Budget Strategies & Resources | Requires capacity in financial management | Requires resource allocation | Requires: Increased efficiency Resource allocation Integrated strategies | Requires: Re-allocation of resources Delegation of decision-making | Requires: Resource allocation Information systems Support for community building | Requires: Local mapping and planning Budget allocation Monitoring capacity at the local operational level | Requires a focus on process and monitoring management | | |

b. Linking Public Health Skills with Public Health Services

1) Introduction

The respondents to the questionnaire allocated Skills to each of the eleven Services. These data were, then, analysed using proportions and frequencies. A Skill was attributed to a Practice if >50% of the respondents considered that a Skill applied to a Practice. Both the unit and the item response rates were 100%.

Based upon the views of Respondents, presented in detail in Table-5.45, each of the 70 Skills listed was attributed to at least 1 of the 11 Services, some to more than 1 Service and few to all Services.

| Numbers of Skills Attributed to one or more Public Health Services | | | |
|--|-----------|-------------|-----------|
| No Services | No Skills | No Services | No Skills |
| 1 | 9 | 7 | 0 |
| 2 | 11 | 8 | 3 |
| 3 | 9 | 9 | 1 |
| 4 | 15 | 10 | 1 |
| 5 | 16 | 11 | 1 |
| 6 | 4 | | |

57/70 Skills were attributed to at least one of the 6 Services that are perceived to have a Current Performance Level as a 'Weakness'.

| Numbers of Skills Attributed to one or more Public Health Services where Current Performance is Considered to be a Weakness | | | |
|---|-----------|-------------|-----------|
| No Services | No Skills | No Services | No Skills |
| 1 | 24 | 4 | 15 |
| 2 | 9 | 5 | 3 |
| 3 | 5 | 6 | 1 |

Although Skills differ in terms of complexity, summations of Skills attributed to each of the Services may indicate a 'relative' importance of Services and may, therefore, be useful for curriculum design. Table-5.46 summarises the number of Skills per Competency Domain and per Service, where shadowed columns indicate Services that were considered to have a Weak Current Level of Performance and the other columns indicate those Services that were

considered to have a Satisfactory Level of Performance. The number of Skills across Competency Domains attributed to each of the Services is as follow:

| Services considered as Satisfactory | | Services considered being a Weakness | |
|-------------------------------------|----|--------------------------------------|----|
| Disseminate Information | 37 | Monitor Health | 22 |
| Policy development | 23 | Diagnose and Investigate | 27 |
| Access to Services | 9 | Partnerships | 27 |
| Assure Human Resources | 17 | Enforce Laws | 7 |
| Planning and Management | 52 | Evaluation | 29 |
| | | Research | 25 |

2) Skills Attributed to Public Health Services Considered as a Current Weakness

To identify those Skills that were attributed to Services considered to have a Weak Level of Performance, the following mechanism was applied:

- (a) Based on the findings in Section-6, the weighted-mean and the related Levels of Mastery of Mid-level Management Staff were used in this analysis.
- (b) Skills attributed to a Service by Respondents were given a value of 1 and Skills that were not attributed for a Service were given the value of 0.
- (c) For each Skill, these values were then entered into a matrix across Services and added up to arrive at a total number of Skill attributions across Services.

To indicate the relative complexity of Services, summations of Skills were then made for each of the Services. The number of Skills involved per Service is presented in Tables 5.46 and 5.47.

An examination of Skills that are attributed to those Services that were considered to have a current Performance as a 'Weakness' shows:

Out of the total set of 70 Skills 57 (81.4%) have been attributed to at least one and up to 6 currently Weak Services.

When Skills are classified by Competency Domain, the ratios are as follows:

| Competency Domain | Ratio of Skills Attributed to Weak Services |
|----------------------------------|---|
| 1. Basic Public Health Skills | 13/13 |
| 2. Analytical Skills | 12/12 |
| 3. Policy Development Skills | 3/7 |
| 4. Social Skills | 3/3 |
| 5. Strategic Management Skills | 7/13 |
| 6. Communication Skills | 7/7 |
| 7. Partnership Skills | 6/6 |
| 8. Operational Management Skills | 6/9 |
| Total | 57/70 |

Out of these Skills, only one (Basic Public Health Skill # 5: 'Apply critical thinking') was attributed to all six Services.

Two Analytical Skills (1) # 1 'Define a problem' and (2) # 5 'Partner with communities to attach meaning to data' and one Social Skill # 1 'Apply appropriate methods to interact with cultural sensitivity' were attributed to 5 Services.

Attributed to 4 Services were 7 Basic Public Health Skills and 8 Analytical Skills.

One Basic Public Health Skill, two Analytical Skills, one Policy Development Skill and one Social Skill were attributed to 3 Services.

The other 33 Skills across Competency Domains were attributed to one or two Weak Services.

Table-5.50: Frequencies and Proportions on those Public Health Skills that are Attributed to Public Health Services as Considered by Questionnaire Respondents

| Domain & Skill No. | Public Health Competency Domains & Skills | Public Health Services | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|------------------------|------|------------------------|------|-------------------------|------|--------------|------|--------------------|------|--------------|------|--------------------|------|------------------------|------|------------|------|----------|------|-----------------------|------|
| | | Monitor Health | | Diagnose & Investigate | | Disseminate Information | | Partnerships | | Policy Development | | Enforce Laws | | Access to Services | | Assure Human Resources | | Evaluation | | Research | | Planning & Management | |
| | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
| | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 1 | Basic Public Health Science Skills | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Identify responsibilities within public ... | 4 | 30.8 | 10 | 76.9 | 7 | 53.8 | 9 | 69.2 | 10 | 76.9 | 5 | 38.5 | 9 | 69.2 | 10 | 76.9 | 8 | 61.5 | 4 | 30.8 | 10 | 76.9 |
| 1.2 | Use basic research designs and ... | 9 | 69.2 | 10 | 76.9 | 1 | 7.7 | 2 | 15.4 | 3 | 23.1 | 1 | 7.7 | 0 | 0.0 | 1 | 7.7 | 11 | 84.6 | 13 | 100 | 3 | 23.1 |
| 1.3 | Apply basic public health sciences. | 10 | 76.9 | 12 | 92.3 | 7 | 53.8 | 2 | 15.4 | 6 | 46.2 | 1 | 7.7 | 3 | 23.1 | 5 | 38.5 | 10 | 76.9 | 9 | 69.2 | 6 | 46.2 |
| 1.4 | Assess and define the health status... | 12 | 92.3 | 13 | 100 | 7 | 53.8 | 2 | 15.4 | 7 | 53.8 | 2 | 15.4 | 6 | 46.2 | 7 | 53.8 | 8 | 61.5 | 10 | 76.9 | 8 | 61.5 |
| 1.5 | Apply critical thinking. | 10 | 76.9 | 10 | 76.9 | 8 | 61.5 | 8 | 61.5 | 11 | 84.6 | 8 | 61.5 | 8 | 61.5 | 8 | 61.5 | 12 | 92.3 | 12 | 92.3 | 10 | 76.9 |
| 1.6 | Identify and access scientific evidence. | 8 | 61.5 | 12 | 92.3 | 8 | 61.5 | 1 | 7.7 | 8 | 61.5 | 2 | 15.4 | 4 | 30.8 | 2 | 15.4 | 9 | 69.2 | 12 | 92.3 | 5 | 38.5 |
| 1.7 | Identify limitations of research. | 4 | 30.8 | 6 | 46.2 | 2 | 15.4 | 0 | 0.0 | 7 | 53.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 9 | 69.2 | 13 | 100 | 4 | 30.8 |
| 1.8 | Apply risk assessment. | 4 | 30.8 | 8 | 61.5 | 5 | 38.5 | 4 | 30.8 | 6 | 46.2 | 2 | 15.4 | 0 | 0.0 | 0 | 0.0 | 3 | 23.1 | 5 | 38.5 | 4 | 30.8 |
| 1.9 | Use public health information packages. | 10 | 76.9 | 11 | 84.6 | 2 | 15.4 | 0 | 0.0 | 2 | 15.4 | 0 | 0.0 | 1 | 7.7 | 2 | 15.4 | 10 | 76.9 | 13 | 100 | 7 | 53.8 |
| 1.10 | Design a surveillance system. | 13 | 100 | 8 | 61.5 | 3 | 23.1 | 0 | 0.0 | 5 | 38.5 | 1 | 7.7 | 1 | 7.7 | 0 | 0.0 | 4 | 30.8 | 3 | 23.1 | 4 | 30.8 |
| 1.11 | Operate a surveillance system. | 13 | 100 | 8 | 61.5 | 2 | 15.4 | 0 | 0.0 | 4 | 30.8 | 1 | 7.7 | 2 | 15.4 | 0 | 0.0 | 4 | 30.8 | 2 | 15.4 | 4 | 30.8 |
| 1.12 | Use computer applications. | 12 | 92.3 | 11 | 84.6 | 8 | 61.5 | 2 | 15.4 | 2 | 15.4 | 3 | 23.1 | 3 | 23.1 | 2 | 15.4 | 11 | 84.6 | 13 | 100 | 9 | 69.2 |
| 1.13 | Apply ethical conduct | 9 | 69.2 | 9 | 69.2 | 2 | 15.4 | 2 | 15.4 | 3 | 23.1 | 5 | 38.5 | 1 | 7.7 | 3 | 23.1 | 10 | 76.9 | 11 | 84.6 | 2 | 15.4 |
| 2 | Analytic Skills | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Define a problem. | 11 | 84.6 | 12 | 92.3 | 5 | 38.5 | 6 | 46.2 | 13 | 100 | 8 | 61.5 | 9 | 69.2 | 8 | 61.5 | 12 | 92.3 | 12 | 92.3 | 11 | 84.6 |
| 2.2 | Determine use data. | 13 | 100 | 13 | 100 | 8 | 61.5 | 0 | 0.0 | 6 | 46.2 | 2 | 15.4 | 4 | 30.8 | 2 | 15.4 | 11 | 84.6 | 11 | 84.6 | 8 | 61.5 |
| 2.3 | Select and define variables. | 10 | 76.9 | 9 | 69.2 | 1 | 7.7 | 0 | 0.0 | 4 | 30.8 | 1 | 7.7 | 3 | 23.1 | 1 | 7.7 | 11 | 84.6 | 13 | 100 | 5 | 38.5 |
| 2.4 | Use basic research designs... | 11 | 84.6 | 9 | 69.2 | 0 | 0.0 | 0 | 0.0 | 2 | 15.4 | 1 | 7.7 | 2 | 15.4 | 1 | 7.7 | 11 | 84.6 | 12 | 92.3 | 3 | 23.1 |
| 2.5 | Partner with communities. | 9 | 69.2 | 10 | 76.9 | 3 | 23.1 | 8 | 61.5 | 1 | 7.7 | 1 | 7.7 | 4 | 30.8 | 4 | 30.8 | 7 | 53.8 | 12 | 92.3 | 5 | 38.5 |
| 2.6 | Use appropriate data collection process | 11 | 84.6 | 9 | 69.2 | 3 | 23.1 | 0 | 0.0 | 1 | 7.7 | 1 | 7.7 | 3 | 23.1 | 0 | 0.0 | 10 | 76.9 | 12 | 92.3 | 5 | 38.5 |

Table-5.50: Frequencies and Proportions on those Public Health Skills that are Attributed to Public Health Services as Considered by Questionnaire Respondents (Cont.)

| Domain & Skill No. | Public Health Competency Domains & Skills | Public Health Services | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--|------------------------|------|------------------------|------|-------------------------|------|--------------|------|--------------------|------|--------------|------|--------------------|------|------------------------|------|------------|------|----------|------|-----------------------|------|
| | | Monitor Health | | Diagnose & Investigate | | Disseminate Information | | Partnerships | | Policy Development | | Enforce Laws | | Access to Services | | Assure Human Resources | | Evaluation | | Research | | Planning & Management | |
| | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
| | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 2.7 | Make relevant inferences from data. | 9 | 69.2 | 10 | 76.9 | 7 | 53.8 | 1 | 7.7 | 3 | 23.1 | 2 | 15.4 | 3 | 23.1 | 1 | 7.7 | 10 | 76.9 | 13 | 100 | 6 | 46.2 |
| 2.8 | Identify relevant data. | 11 | 84.6 | 12 | 92.3 | 7 | 53.8 | 2 | 15.4 | 4 | 30.8 | 2 | 15.4 | 3 | 23.1 | 1 | 7.7 | 11 | 84.6 | 13 | 100 | 8 | 61.5 |
| 2.9 | Apply ethical principles. | 10 | 76.9 | 10 | 76.9 | 11 | 84.6 | 2 | 15.4 | 6 | 46.2 | 5 | 38.5 | 4 | 30.8 | 5 | 38.5 | 9 | 69.2 | 11 | 84.6 | 6 | 46.2 |
| 2.10 | Evaluate data. | 5 | 38.5 | 11 | 84.6 | 3 | 23.1 | 1 | 7.7 | 2 | 15.4 | 1 | 7.7 | 3 | 23.1 | 0 | 0.0 | 11 | 84.6 | 13 | 100 | 4 | 30.8 |
| 2.11 | Illuminate issues from data. | 6 | 46.2 | 9 | 69.2 | 7 | 53.8 | 2 | 15.4 | 8 | 61.5 | 5 | 38.5 | 1 | 7.7 | 0 | 0.0 | 9 | 69.2 | 13 | 100 | 6 | 46.2 |
| 2.12 | Obtain and interpret risks and benefits | 10 | 76.9 | 11 | 84.6 | 8 | 61.5 | 5 | 38.5 | 4 | 30.8 | 2 | 15.4 | 4 | 30.8 | 2 | 15.4 | 8 | 61.5 | 8 | 61.5 | 4 | 30.8 |
| 3 | Policy Development Skills | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 | Collect information relevant to an issue. | 4 | 30.8 | 9 | 69.2 | 6 | 46.2 | 5 | 38.5 | 12 | 92.3 | 4 | 30.8 | 2 | 15.4 | 1 | 7.7 | 8 | 61.5 | 8 | 61.5 | 9 | 69.2 |
| 3.2 | State policy options. | 0 | 0.0 | 1 | 7.7 | 7 | 53.8 | 1 | 7.7 | 12 | 92.3 | 1 | 7.7 | 2 | 15.4 | 3 | 23.1 | 1 | 7.7 | 0 | 0.0 | 8 | 61.5 |
| 3.3 | Articulate implications of policy options. | 0 | 0.0 | 1 | 7.7 | 6 | 46.2 | 2 | 15.4 | 13 | 100 | 4 | 30.8 | 1 | 7.7 | 1 | 7.7 | 1 | 7.7 | 2 | 15.4 | 6 | 46.2 |
| 3.4 | State the expected outcome of policy. | 1 | 7.7 | 2 | 15.4 | 4 | 30.8 | 2 | 15.4 | 12 | 92.3 | 1 | 7.7 | 2 | 15.4 | 1 | 7.7 | 3 | 23.1 | 0 | 0.0 | 9 | 69.2 |
| 3.5 | Decide on the course of action. | 0 | 0.0 | 2 | 15.4 | 4 | 30.8 | 7 | 53.8 | 11 | 84.6 | 8 | 61.5 | 7 | 53.8 | 6 | 46.2 | 6 | 46.2 | 1 | 7.7 | 10 | 76.9 |
| 3.6 | Utilise techniques in analysis and... | 0 | 0.0 | 2 | 15.4 | 4 | 30.8 | 1 | 7.7 | 9 | 69.2 | 0 | 0.0 | 2 | 15.4 | 1 | 7.7 | 3 | 23.1 | 2 | 15.4 | 11 | 84.6 |
| 3.7 | Identify policies for specific programs. | 1 | 7.7 | 2 | 15.4 | 8 | 61.5 | 1 | 7.7 | 7 | 53.8 | 11 | 84.6 | 2 | 15.4 | 3 | 23.1 | 4 | 30.8 | 1 | 7.7 | 8 | 61.5 |
| 4 | Social Skills | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Interact sensitivity, effectively, and... | 7 | 53.8 | 10 | 76.9 | 11 | 84.6 | 12 | 92.3 | 8 | 61.5 | 8 | 61.5 | 8 | 61.5 | 10 | 76.9 | 6 | 46.2 | 8 | 61.5 | 10 | 76.9 |
| 4.2 | Identify the role of cultural factors... | 3 | 23.1 | 7 | 53.8 | 7 | 53.8 | 9 | 69.2 | 9 | 69.2 | 4 | 30.8 | 11 | 84.6 | 9 | 69.2 | 7 | 53.8 | 3 | 23.1 | 8 | 61.5 |
| 4.3 | Adapt problem solving hat take... | 2 | 15.4 | 5 | 38.5 | 5 | 38.5 | 10 | 76.9 | 8 | 61.5 | 6 | 46.2 | 5 | 38.5 | 8 | 61.5 | 3 | 23.1 | 4 | 30.8 | 10 | 76.9 |
| 5 | Strategic Management Skills | | | | | | | | | | | | | | | | | | | | | | |
| 5.1 | Prepare and implement emergency... | 1 | 7.7 | 2 | 15.4 | 5 | 38.5 | 1 | 7.7 | 4 | 30.8 | 2 | 15.4 | 5 | 38.5 | 6 | 46.2 | 2 | 15.4 | 0 | 0.0 | 12 | 92.3 |
| 5.2 | Develops plans. | 1 | 7.7 | 0 | 0.0 | 2 | 15.4 | 3 | 23.1 | 5 | 38.5 | 2 | 15.4 | 6 | 46.2 | 3 | 23.1 | 3 | 23.1 | 0 | 0.0 | 11 | 84.6 |

Table-5.50: Frequencies and Proportions on those Public Health Skills that are Attributed to Public Health Services as Considered by Questionnaire Respondents (Cont.)

| Domain & Skill No. | Public Health Competency Domains & Skills | Public Health Services | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|------------------------|------|------------------------|------|-------------------------|------|--------------|------|--------------------|------|--------------|------|--------------------|------|------------------------|------|------------|------|----------|------|-----------------------|------|---|---|
| | | Monitor Health | | Diagnose & Investigate | | Disseminate Information | | Partnerships | | Policy Development | | Enforce Laws | | Access to Services | | Assure Human Resources | | Evaluation | | Research | | Planning & Management | | | |
| | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | | | |
| | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 5.3 | Translate policy in organisational plans. | 0 | 0.0 | 0 | 0.0 | 5 | 38.5 | 2 | 15.4 | 3 | 23.1 | 1 | 7.7 | 5 | 38.5 | 6 | 46.2 | 2 | 15.4 | 0 | 0.0 | 11 | 84.6 | | |
| 5.4 | Monitor and evaluate programs. | 4 | 30.8 | 1 | 7.7 | 3 | 23.1 | 0 | 0.0 | 1 | 7.7 | 0 | 0.0 | 5 | 38.5 | 3 | 23.1 | 9 | 69.2 | 5 | 38.5 | 11 | 84.6 | | |
| 5.5 | Conduct cost-effectiveness... | 1 | 7.7 | 0 | 0.0 | 3 | 23.1 | 0 | 0.0 | 3 | 23.1 | 0 | 0.0 | 3 | 23.1 | 4 | 30.8 | 9 | 69.2 | 6 | 46.2 | 10 | 76.9 | | |
| 5.6 | Apply theory of organisation. | 2 | 15.4 | 0 | 0.0 | 6 | 46.2 | 3 | 23.1 | 1 | 7.7 | 0 | 0.0 | 5 | 38.5 | 7 | 53.8 | 6 | 46.2 | 2 | 15.4 | 7 | 53.8 | | |
| 5.7 | Contribute to performance standards. | 1 | 7.7 | 0 | 0.0 | 5 | 38.5 | 1 | 7.7 | 2 | 15.4 | 1 | 7.7 | 7 | 53.8 | 7 | 53.8 | 10 | 76.9 | 1 | 7.7 | 10 | 76.9 | | |
| 5.8 | Promote team learning and... | 3 | 23.1 | 2 | 15.4 | 7 | 53.8 | 7 | 53.8 | 1 | 7.7 | 1 | 7.7 | 2 | 15.4 | 10 | 76.9 | 4 | 30.8 | 4 | 30.8 | 10 | 76.9 | | |
| 5.9 | Create key values and shared vision. | 1 | 7.7 | 1 | 7.7 | 9 | 69.2 | 7 | 53.8 | 4 | 30.8 | 1 | 7.7 | 3 | 23.1 | 7 | 53.8 | 2 | 15.4 | 1 | 7.7 | 11 | 84.6 | | |
| 5.10 | Identify issues through strategic... | 1 | 7.7 | 0 | 0.0 | 5 | 38.5 | 1 | 7.7 | 3 | 23.1 | 0 | 0.0 | 2 | 15.4 | 4 | 30.8 | 4 | 30.8 | 1 | 7.7 | 10 | 76.9 | | |
| 5.11 | Use methods that effect change. | 0 | 0.0 | 0 | 0.0 | 7 | 53.8 | 5 | 38.5 | 3 | 23.1 | 1 | 7.7 | 4 | 30.8 | 5 | 38.5 | 3 | 23.1 | 1 | 7.7 | 11 | 84.6 | | |
| 5.12 | Ensure participation of stakeholders. | 1 | 7.7 | 1 | 7.7 | 9 | 69.2 | 12 | 92.3 | 3 | 23.1 | 2 | 15.4 | 1 | 7.7 | 5 | 38.5 | 2 | 15.4 | 1 | 7.7 | 10 | 76.9 | | |
| 5.13 | Create a culture of ethical. | 2 | 15.4 | 1 | 7.7 | 9 | 69.2 | 10 | 76.9 | 6 | 46.2 | 5 | 38.5 | 5 | 38.5 | 7 | 53.8 | 3 | 23.1 | 1 | 7.7 | 11 | 84.6 | | |
| 6 | Communication Skills | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.1 | Communicate effectively. | 6 | 46.2 | 6 | 46.2 | 12 | 92.3 | 11 | 84.6 | 7 | 53.8 | 4 | 30.8 | 6 | 46.2 | 9 | 69.2 | 5 | 38.5 | 5 | 38.5 | 8 | 61.5 | | |
| 6.2 | Solicit input from individuals and... | 5 | 38.5 | 6 | 46.2 | 10 | 76.9 | 11 | 84.6 | 8 | 61.5 | 5 | 38.5 | 3 | 23.1 | 6 | 46.2 | 5 | 38.5 | 5 | 38.5 | 8 | 61.5 | | |
| 6.3 | Advocate for public health. | 3 | 23.1 | 3 | 23.1 | 9 | 69.2 | 11 | 84.6 | 9 | 69.2 | 5 | 38.5 | 5 | 38.5 | 8 | 61.5 | 3 | 23.1 | 3 | 23.1 | 9 | 69.2 | | |
| 6.4 | Lead and participate in-groups. | 1 | 7.7 | 3 | 23.1 | 8 | 61.5 | 13 | 100 | 7 | 53.8 | 6 | 46.2 | 6 | 46.2 | 7 | 53.8 | 5 | 38.5 | 3 | 23.1 | 9 | 69.2 | | |
| 6.5 | Use the channels to communicate... | 5 | 38.5 | 4 | 30.8 | 11 | 84.6 | 12 | 92.3 | 6 | 46.2 | 7 | 53.8 | 4 | 30.8 | 8 | 61.5 | 4 | 30.8 | 4 | 30.8 | 8 | 61.5 | | |
| 6.6 | Listen to others in an unbiased manner. | 3 | 23.1 | 3 | 23.1 | 9 | 69.2 | 11 | 84.6 | 8 | 61.5 | 7 | 53.8 | 4 | 30.8 | 5 | 38.5 | 6 | 46.2 | 5 | 38.5 | 9 | 69.2 | | |
| 6.7 | Make effective presentations. | 1 | 7.7 | 5 | 38.5 | 10 | 76.9 | 10 | 76.9 | 8 | 61.5 | 6 | 46.2 | 5 | 38.5 | 4 | 30.8 | 5 | 38.5 | 5 | 38.5 | 10 | 76.9 | | |

Table-5.50: Frequencies and Proportions on those Public Health Skills that are Attributed to Public Health Services as Considered by Questionnaire Respondents (Cont.)

| Domain & Skill No. | Public Health Competency Domains & Skills | Public Health Services | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|------------------------|------|------------------------|------|-------------------------|------|--------------|------|--------------------|------|--------------|------|--------------------|------|------------------------|------|------------|------|----------|------|-----------------------|------|
| | | Monitor Health | | Diagnose & Investigate | | Disseminate Information | | Partnerships | | Policy Development | | Enforce Laws | | Access to Services | | Assure Human Resources | | Evaluation | | Research | | Planning & Management | |
| | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
| | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 7 | Partnership Skills | | | | | | | | | | | | | | | | | | | | | | |
| 7.1 | Maintain linkages with stakeholders. | 3 | 23.1 | 2 | 15.4 | 11 | 84.6 | 13 | 100 | 5 | 38.5 | 5 | 38.5 | 5 | 38.5 | 5 | 38.5 | 6 | 46.2 | 4 | 30.8 | 10 | 76.9 |
| 7.2 | Collaborate with community partners... | 2 | 15.4 | 2 | 15.4 | 11 | 84.6 | 13 | 100 | 5 | 38.5 | 4 | 30.8 | 6 | 46.2 | 5 | 38.5 | 2 | 15.4 | 0 | 0.0 | 9 | 69.2 |
| 7.3 | Mobilise organisations in community. | 2 | 15.4 | 2 | 15.4 | 11 | 84.6 | 12 | 92.3 | 5 | 38.5 | 4 | 30.8 | 5 | 38.5 | 6 | 46.2 | 0 | 0.0 | 1 | 7.7 | 9 | 69.2 |
| 7.4 | Use skills to build partnerships. | 0 | 0.0 | 0 | 0.0 | 6 | 46.2 | 13 | 100 | 6 | 46.2 | 2 | 15.4 | 3 | 23.1 | 4 | 30.8 | 1 | 7.7 | 1 | 7.7 | 9 | 69.2 |
| 7.5 | Identify community resources. | 2 | 15.4 | 3 | 23.1 | 7 | 53.8 | 9 | 69.2 | 4 | 30.8 | 2 | 15.4 | 7 | 53.8 | 5 | 38.5 | 5 | 38.5 | 1 | 7.7 | 9 | 69.2 |
| 7.6 | Develop a community assessment. | 5 | 38.5 | 5 | 38.5 | 8 | 61.5 | 4 | 30.8 | 4 | 30.8 | 1 | 7.7 | 4 | 30.8 | 2 | 15.4 | 8 | 61.5 | 4 | 30.8 | 9 | 69.2 |
| 8 | Operational Management Skills | | | | | | | | | | | | | | | | | | | | | | |
| 8.1 | Develop and present a budget. | 2 | 15.4 | 0 | 0.0 | 6 | 46.2 | 7 | 53.8 | 1 | 7.7 | 1 | 7.7 | 4 | 30.8 | 6 | 46.2 | 4 | 30.8 | 4 | 30.8 | 12 | 92.3 |
| 8.2 | Manage programs without budget... | 2 | 15.4 | 0 | 0.0 | 4 | 30.8 | 2 | 15.4 | 1 | 7.7 | 2 | 15.4 | 4 | 30.8 | 4 | 30.8 | 6 | 46.2 | 5 | 38.5 | 12 | 92.3 |
| 8.3 | Apply budget processes. | 2 | 15.4 | 0 | 0.0 | 4 | 30.8 | 1 | 7.7 | 1 | 7.7 | 1 | 7.7 | 2 | 15.4 | 1 | 7.7 | 5 | 38.5 | 4 | 30.8 | 12 | 92.3 |
| 8.4 | Determine budget priorities. | 1 | 7.7 | 0 | 0.0 | 4 | 30.8 | 2 | 15.4 | 4 | 30.8 | 1 | 7.7 | 2 | 15.4 | 3 | 23.1 | 3 | 23.1 | 2 | 15.4 | 12 | 92.3 |
| 8.5 | Monitor program performance. | 4 | 30.8 | 1 | 7.7 | 3 | 23.1 | 2 | 15.4 | 1 | 7.7 | 1 | 7.7 | 2 | 15.4 | 5 | 38.5 | 7 | 53.8 | 3 | 23.1 | 11 | 84.6 |
| 8.6 | Develop proposals for funding. | 2 | 15.4 | 0 | 0.0 | 7 | 53.8 | 9 | 69.2 | 3 | 23.1 | 1 | 7.7 | 2 | 15.4 | 2 | 15.4 | 6 | 46.2 | 8 | 61.5 | 12 | 92.3 |
| 8.7 | Apply basic human relation skills. | 4 | 30.8 | 1 | 7.7 | 7 | 53.8 | 11 | 84.6 | 4 | 30.8 | 6 | 46.2 | 8 | 61.5 | 10 | 76.9 | 5 | 38.5 | 1 | 7.7 | 10 | 76.9 |
| 8.8 | Manage information systems... | 7 | 53.8 | 5 | 38.5 | 9 | 69.2 | 3 | 23.1 | 4 | 30.8 | 2 | 15.4 | 3 | 23.1 | 3 | 23.1 | 5 | 38.5 | 7 | 53.8 | 11 | 84.6 |
| 8.9 | Apply ethical conduct. | 5 | 38.5 | 3 | 23.1 | 8 | 61.5 | 7 | 53.8 | 3 | 23.1 | 4 | 30.8 | 3 | 23.1 | 5 | 38.5 | 6 | 46.2 | 3 | 23.1 | 10 | 76.9 |

Table-5.51: Number of Skill Application by Competency Domain for Public Health Services

| Public Health Competency Domains | Public Health Services | | | | | | | | | | |
|------------------------------------|------------------------|----------------|-------------------|--------------|-----------------|--------------|-----------------|-----------|------------|-----------|-----------------|
| | Monitor Health | Diagnose & ... | Disseminate Info. | Partnerships | Policy Develop. | Enforce Laws | Access Services | Assure HR | Evaluation | Research | Planning & Mgt. |
| Basic Public Health Skills (13) | 10 | 12 | 6 | 2 | 5 | 1 | 2 | 3 | 10 | 9 | 5 |
| Analytical Skills (12) | 10 | 12 | 6 | 1 | 2 | 1 | 1 | 1 | 12 | 12 | 3 |
| Policy Development Skills (7) | 0 | 1 | 2 | 1 | 7 | 2 | 1 | 0 | 1 | 1 | 6 |
| Social Skills (3) | 1 | 2 | 2 | 3 | 3 | 1 | 2 | 3 | 1 | 1 | 3 |
| Strategic Management Skills (13) | 0 | 0 | 5 | 4 | 0 | 0 | 1 | 5 | 3 | 0 | 13 |
| Communication Skills (7) | 0 | 0 | 7 | 7 | 6 | 2 | 0 | 4 | 0 | 0 | 7 |
| Partnership Skills (6) | 0 | 0 | 5 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 6 |
| Operational Management Skills (9) | 1 | 0 | 4 | 4 | 0 | 0 | 1 | 1 | 1 | 2 | 9 |
| Total # Skills per Practice | 22 | 27 | 37 | 27 | 23 | 7 | 9 | 17 | 29 | 25 | 52 |

Legend: Shadowed columns represent those Services that are currently considered as a 'Weakness'.

Table-5.52: Public Health Skills Sorted by Level of Mastery then by Frequency of Attribution Across All Services and then by Frequency of Attribution Across Currently Weak Services

| Domain & Skill No. | Public Health Competency Domains & Skills | View Key Stakeholders | | Skills Attributed to Services | | | |
|--------------------|---|-----------------------|------------------|-------------------------------|-------|-----------------|-------|
| | | Weighted Mean | Level of Mastery | Weak PH Services | | All PH Services | |
| | | | | N | % | N | % |
| 2.1 | Define a problem. | 2.42 | P | 5 | 83.3 | 9 | 81.8 |
| 6.6 | Listen to others in an unbiased manner. | 2.35 | P | 2 | 33.3 | 5 | 45.5 |
| 6.1 | Communicate effectively. | 2.49 | P | 1 | 16.7 | 5 | 45.5 |
| 8.6 | Develop proposals for funding. | 2.44 | P | 2 | 33.3 | 4 | 36.4 |
| 8.8 | Manage information systems for decision-making. | 2.36 | P | 2 | 33.3 | 4 | 36.4 |
| 5.3 | Translate policy into organisational plans. | 2.35 | P | 1 | 16.7 | 4 | 36.4 |
| 5.4 | Monitors and evaluate programs. | 2.35 | P | 1 | 16.7 | 4 | 36.4 |
| 6.2 | Solicit input from individuals and organisations. | 2.41 | P | 1 | 16.7 | 4 | 36.4 |
| 6.7 | Make accurate and effective presentations. | 2.43 | P | 1 | 16.7 | 4 | 36.4 |
| 7.1 | Maintain linkages with key stakeholders. | 2.37 | P | 1 | 16.7 | 3 | 27.3 |
| 7.6 | Develop a community assessment. | 2.37 | P | 1 | 16.7 | 3 | 27.3 |
| 8.9 | Apply ethical conduct in practice. | 2.34 | P | 1 | 16.7 | 3 | 27.3 |
| 7.4 | Use management skills to build partnerships. | 2.39 | P | 1 | 16.7 | 2 | 18.2 |
| 8.1 | Develop and present a budget. | 2.52 | P | 1 | 16.7 | 2 | 18.2 |
| 8.5 | Monitor program performance. | 2.42 | P | 1 | 16.7 | 2 | 18.2 |
| 8.4 | Determine budget priorities. | 2.36 | P | 0 | 0.0 | 1 | 9.1 |
| 1.13 | Apply ethical conduct. | 2.12 | K | 6 | 100.0 | 11 | 100.0 |
| 4.1 | Interact sensitivity, effectively and professionally. | 2.26 | K | 4 | 66.7 | 9 | 81.8 |
| 1.12 | Use computer applications. | 2.24 | K | 4 | 66.7 | 8 | 72.7 |
| 1.1 | Identify responsibilities within public health. | 2.26 | K | 3 | 50.0 | 8 | 72.7 |
| 4.2 | Identify the role of cultural factors in... | 2.04 | K | 3 | 50.0 | 8 | 72.7 |
| 1.2 | Use basic research designs and methods. | 2.26 | K | 4 | 66.7 | 6 | 54.5 |
| 1.8 | Apply risk assessment. | 2.09 | K | 4 | 66.7 | 6 | 54.5 |
| 2.10 | Evaluate data. | 2.23 | K | 4 | 66.7 | 6 | 54.5 |
| 2.5 | Partner with communities. | 2.16 | K | 4 | 66.7 | 6 | 54.5 |
| 2.2 | Determine appropriate use of data. | 2.31 | K | 5 | 83.3 | 5 | 45.5 |
| 1.11 | Operate a surveillance system. | 2.18 | K | 4 | 66.7 | 5 | 45.5 |
| 1.5 | Apply critical thinking. | 2.08 | K | 4 | 66.7 | 5 | 45.5 |
| 2.4 | Use basic research designs and methods. | 2.20 | K | 4 | 66.7 | 5 | 45.5 |
| 2.6 | Use appropriate data collection. | 2.06 | K | 4 | 66.7 | 5 | 45.5 |
| 2.9 | Apply ethical principles. | 2.12 | K | 4 | 66.7 | 5 | 45.5 |
| 2.8 | Identify relevant and appropriate data. | 2.18 | K | 3 | 50.0 | 5 | 45.5 |
| 3.1 | Collect information relevant to an issue. | 2.21 | K | 3 | 50.0 | 5 | 45.5 |
| 3.5 | Decide on the appropriate course of action. | 2.19 | K | 2 | 33.3 | 5 | 45.5 |
| 6.5 | Use channels to communicate information. | 2.25 | K | 2 | 33.3 | 5 | 45.5 |
| 6.3 | Advocate for public health. | 2.19 | K | 1 | 16.7 | 5 | 45.5 |
| 6.4 | Lead and participate in-groups. | 2.30 | K | 1 | 16.7 | 5 | 45.5 |

Table-5.52: Public Health Skills Sorted by Level of Mastery then by Frequency of Attribution Across All Services and then by Frequency of Attribution Across Currently Weak Services (Cont.)

| Domain & Skill No. | Public Health Competency Domains & Skills | View Key Stakeholders | | Skills Attributed to Services | | | |
|--------------------|--|-----------------------|------------------|-------------------------------|------|-----------------|------|
| | | Weighted Mean | Level of Mastery | Weak PH Services | | All PH Services | |
| | | | | N | % | N | % |
| | | \bar{X} | | | | | |
| 8.7 | Apply basic human relation skills. | 2.32 | K | 1 | 16.7 | 5 | 45.5 |
| 1.10 | Design a surveillance system. | 2.07 | K | 4 | 66.7 | 4 | 36.4 |
| 1.9 | Use public health information packages. | 2.15 | K | 4 | 66.7 | 4 | 36.4 |
| 2.11 | Illuminate issues from data. | 2.05 | K | 4 | 66.7 | 4 | 36.4 |
| 2.12 | Interpret risks and benefits to the community. | 2.17 | K | 4 | 66.7 | 4 | 36.4 |
| 2.3 | Select and define variables. | 2.21 | K | 4 | 66.7 | 4 | 36.4 |
| 3.7 | Identify policies for specific programs. | 2.27 | K | 1 | 16.7 | 4 | 36.4 |
| 4.3 | Adapt problem solving to cultural differences. | 2.14 | K | 1 | 16.7 | 4 | 36.4 |
| 5.5 | Conduct cost-effectiveness... | 2.16 | K | 1 | 16.7 | 4 | 36.4 |
| 5.9 | Create key values and shared vision. | 2.22 | K | 1 | 16.7 | 4 | 36.4 |
| 7.5 | Identify community resources. | 2.23 | K | 1 | 16.7 | 4 | 36.4 |
| 2.7 | Make relevant inferences from data. | 2.27 | K | 3 | 50.0 | 3 | 27.3 |
| 1.3 | Apply basic public health sciences. | 2.15 | K | 2 | 33.3 | 3 | 27.3 |
| 5.8 | Promote team learning and organisation learning. | 2.24 | K | 1 | 16.7 | 3 | 27.3 |
| 7.2 | Collaborate with community to promote health. | 2.23 | K | 1 | 16.7 | 3 | 27.3 |
| 7.3 | Mobilise organisations within the community. | 2.32 | K | 1 | 16.7 | 3 | 27.3 |
| 3.2 | State policy options. | 2.04 | K | 0 | 0.0 | 3 | 27.3 |
| 1.6 | Identify and access scientific evidence. | 1.96 | K | 2 | 33.3 | 2 | 18.2 |
| 1.7 | Identify limitations of research. | 2.05 | K | 2 | 33.3 | 2 | 18.2 |
| 5.12 | Ensure participation of key stakeholders. | 2.19 | K | 1 | 16.7 | 2 | 18.2 |
| 5.13 | Create a culture of ethical standards. | 2.14 | K | 1 | 16.7 | 2 | 18.2 |
| 3.4 | State the expected outcome of policy options. | 1.98 | K | 0 | 0.0 | 2 | 18.2 |
| 3.6 | Utilise techniques in analysis and planning. | 2.32 | K | 0 | 0.0 | 2 | 18.2 |
| 5.2 | Develop plans. | 2.32 | K | 0 | 0.0 | 2 | 18.2 |
| 5.7 | Contribute to performance standards. | 2.15 | K | 0 | 0.0 | 2 | 18.2 |
| 1.4 | Assess the health status of populations. | 2.25 | K | 1 | 16.7 | 1 | 9.1 |
| 3.3 | Articulate implications of policy options. | 2.05 | K | 0 | 0.0 | 1 | 9.1 |
| 5.1 | Prepare and implement emergency plans. | 2.30 | K | 0 | 0.0 | 1 | 9.1 |
| 5.10 | Identify issues through strategic planning. | 2.23 | K | 0 | 0.0 | 1 | 9.1 |
| 5.11 | Use appropriate methods that effect change. | 2.18 | K | 0 | 0.0 | 1 | 9.1 |
| 5.6 | Apply theory of organisation. | 2.16 | K | 0 | 0.0 | 1 | 9.1 |
| 8.2 | Manage programs without budget constraints. | 2.24 | K | 0 | 0.0 | 1 | 9.1 |
| 8.3 | Apply budget processes. | 2.28 | K | 0 | 0.0 | 1 | 9.1 |

Legend: P = Proficiency, K = Knowledgeable

C. Designing a Relevance Assessment Instrument

1. Instrument Design

To set boundaries for the study the operational definition of relevance was revised and accepted by the panel of experts as follows:

Relevance in public health education is the congruence, in general terms, between: (a) the needs for Public Health Practice and (b) a Program's Purpose and Objectives, (c) Student Selection, (d) Curriculum Design and (e) Students' Assessment.

Based on the analysis of needs, each of these Relevance Components were attributed with Essential and Complementary Factors, to form an instrument framework as shown below:

| Relevance Assessment Framework | | |
|---------------------------------------|---|--|
| Relevance Components | Essential Factors | Complementary Factors |
| • Assessment of Needs | Public Health Practices Public Health Services Public Health Competencies Target Groups Programmatic Requirements Partnerships | |
| • Program Purpose & Objectives | Specialisation & Major Program Objectives Partnerships | |
| • Student Selection | | Selection Criteria Selection Outcomes |
| • Curriculum Design | Course Descriptions Instructional Objectives | |
| • Student Assessment | | Content Areas Approach to Teaching Students' Culminating Achievement |

A detailed description of the revised RAI including Factor descriptions, interpretations, indicators, their measures, data sources and methods is presented in Research Report-XIII. Table 5.48 below summarises the RAI, presenting both the Essential and Complementary Factors.

Table-5.53: A Synopsis of the Relevance Assessment Instrument for the Learning @ the Workplace Program in Thailand

| RAI Components & Factors | Indicators | Measures | Source | Methods |
|---|--|--|---|---------------------------------|
| Assessment of Needs | | | | |
| Public Health Services | Degree of Service Importance | Frequencies & Proportions | Local expert panel | Interviews |
| | Current Level of Performance | Frequencies & Proportions | Stakeholders | Mail questionnaire |
| Public Health Competencies | Not Core Skills | Frequencies | Stakeholders | Mail questionnaire |
| | Core Skills | Frequencies | Stakeholders | Mail questionnaire |
| | Level of Mastery in Core Skills | Frequencies, Proportions & Weighted Mean | Stakeholders | Mail questionnaire |
| | Type of staff | Frequencies, Proportions & Weighted Mean | Stakeholders | Mail questionnaire |
| Targeted Professionals | Job Category | Qualitative & Frequencies/Proportions | Provincial partners Local expert panel | Focus Groups Interviews |
| | Functional Level | Qualitative & Frequencies/Proportions | Provincial partners Local expert panel | Focus Groups Interviews |
| | Educational Background | Qualitative & Frequencies/Proportions | Provincial partners Local expert panel | Focus Groups Interviews |
| Programmatic Requirements | Educational Level | Qualitative | Provincial partners | Focus Groups |
| | Type of Program | Qualitative | Provincial partners | Focus Groups |
| | Program's Major | Qualitative | Provincial partners | Focus Groups |
| Partnerships | College-Workplace Liaison | Qualitative | Provincial partners | Focus groups |
| | Reciprocity | Qualitative | Provincial partners | Focus Groups |
| Program purpose & objectives | | | | |
| Specialisation + Major | Program Level | Qualitative | Accredited & actual program documentation Program partners | Archival research Interviews |
| | Program Type | Qualitative | Accredited & actual program documentation Program partners | Archival research Interviews |

Table-5.53: A Synopsis of the Relevance Assessment Instrument for the Learning @ the Workplace Program in Thailand (Cont.)

| RAI Components & Factors | Indicators | Measures | Source | Methods |
|--|----------------------------------|--|---|--|
| | Program Major | Qualitative | Accredited and actual program documentation Program partners | Archival research Interviews |
| Program Objectives | System Objectives | Qualitative | Accredited & actual program descriptions Program partners | Archival research Interviews |
| | Program Objectives | Qualitative | Accredited & actual program descriptions Program partners | Archival research Interviews |
| Partnerships | College-Workplace Liaison | Qualitative | Academic records Program co-ordinator | Archival research Interview |
| | Reciprocity | Qualitative | Program partners | Interviews Focus groups |
| Student Selection | | | | |
| Selection Criteria | Job Category | Qualitative | Selection criteria documentation | Archival research |
| | Educational Background | Qualitative | Selection criteria documentation | Archival research |
| | Functional Level | Qualitative | Selection criteria documentation | Archival research |
| | Language Skills | Qualitative | Selection criteria documentation | Archival research |
| Selection Outcomes | Job Category | Frequencies & Proportions | Academic records | Archival research |
| | Educational Background | Frequencies & Proportions | Academic records | Archival research |
| | Functional Level | Frequencies & Proportions | Academic records | Archival research |
| | Language Skills | Frequencies & Proportions | Academic records | Archival research |
| Student Assessment | | | | |
| Student Culminating Achievement | Course Assessment Methods | Ratio Learning Objectives (Skills) covered/Assessment | Assessment documentation | Archival research |
| | Thesis Assessment Methods | Frequencies & proportions of thesis types Frequencies & proportions on pass-level | Student thesis Academic records | Archival research Archival research |

Table-5.53: A Synopsis of the Relevance Assessment Instrument for the Learning @ the Workplace Program in Thailand (Cont.)

| RAI Components & Factors | Indicators | Measures | Source | Methods |
|-------------------------------------|---|---|--|--|
| | Assessment Measure Outcomes | Completion rates Completion/time ratio | Academic records Academic records | Archival research |
| | Job Placements | Frequencies & proportions on drop-out Proportion of graduates employed within 12 months Proportion of graduates promoted within 24 months | Academic records Graduates Graduates | Survey graduates Survey graduates |
| | Self-assessment | Frequencies & Proportions on Acquired Level of Skill Mastery | Students | Questionnaire |
| Curriculum Design | | | | |
| Course Descriptions | Accredited Courses | Qualitative | Documentation on accreditation | Archival research |
| | Actual Courses | Qualitative | Program documentation/Faculty | Archival research |
| Instructional Objectives | Course Objectives | Qualitative | Course syllabuses | Archival research |
| | Learning Objectives | Qualitative Frequencies/proportions of LO (Core Skills) covered | Lesson plans Faculty | Archival research Questionnaire |
| | LO requiring Proficiency | Frequencies/proportions of LO (Skills) covered | Faculty | Questionnaire |
| | LO requiring Knowledgeable | Frequencies/proportions of LO (Skills) covered | Faculty | Questionnaire |
| | LO requiring awareness | Frequencies/Proportions of LO (Skills) covered | Faculty | Questionnaire |
| | LO across Services | Frequencies of LO (Skills) covered by Service Ratio of LO (Skills) covered by Level of Mastery | Faculty | Questionnaire Questionnaire |
| Content Areas | Content KAP Objectives with highest coverage | Qualitative Frequencies/proportions & qualitative | Course syllabuses Lesson plans Faculty | Archival research Archival research Interviews |

Table-5.53: A Synopsis of the Relevance Assessment Instrument for the Learning @ the Workplace Program in Thailand (Cont.)

| RAI Components & Factors | Indicators | Measures | Source | Methods |
|-------------------------------------|---------------------------------|---|--|---|
| | Objectives with lowest coverage | Frequencies/proportions & qualitative | Lesson plans Faculty | Archival research Interviews |
| Approach | PBL applications | No of application that address Services and related Skills | Course syllabuses/lesson plans Assignment documentation | Archival research Archival research |
| | Student-centred applications | No of provincial project/province/intake Qualitative | Learning projects' documentation Faculty Students | Archival research Interviews Focus Groups |
| | Community oriented applications | Qualitative | Project documentation | Archival research |
| | Community-based applications | Qualitative | Project documentation | Archival research |
| | Reciprocity | No of provincial project/province/intake No of deliverables achieved/project | Project contracts/project reports | Archival research |

Legend: Essential relevance factors and indicators are printed in bold. KAP = Knowledge, Attitudes, Practice; PBL = Problem Based Learning; No = number; LO = Learning Objectives

2. Prospective Evaluation of the Instrument

| <i>Questions*</i> | <i>Panel's Judgement</i> | <i>Clarification</i> |
|--|--------------------------|--|
| 1. Does the instrument seek to answer a clear question? | Yes | <ul style="list-style-type: none"> The instrument design was based on (1) an operational definition of relevance and (2) an analysis of need for the LWP. These, then, facilitated the identification of relevance factors, their indicators and measures and data sources. |
| 2. Does the instrument allow identification of clear learning need? | Partly | <ul style="list-style-type: none"> Because of the nature of the assessment (relevance), the instrument focused on the functional and the social views only, not on the academic view. The latter need to be addressed in curriculum revision. |
| 3. Does the instrument address the educational context? | Yes | <ul style="list-style-type: none"> The instrument included the public health system need, human resource pool need, programmatic requirement need and the need for partnerships. |
| 4. Does the instrument address the precise nature of the program? | Yes | <ul style="list-style-type: none"> The instrument did address the program's purpose and objectives and curriculum design aspects. |
| 5. Is the instrument design able to answer the question? | Yes | <ul style="list-style-type: none"> The instrument included a need assessment section. |
| 6. Are the methods within the instrument design capable of appropriately assessing the phenomenon under study? | Yes | <ul style="list-style-type: none"> There was sufficient variety of methods and data sources allowing for triangulation. |
| 7. Are the factors in the instrument appropriate to evaluate program relevance? | Yes | <ul style="list-style-type: none"> Factors were appropriate to indicate relevance gaps, although root causes may remain hidden (organisation performance) |
| 8. Can assessment outcome create rival explanations? | Uncertain | <ul style="list-style-type: none"> Triangulation of results was important. |
| 9. Can unanticipated outcomes be explained? | Uncertain | <ul style="list-style-type: none"> This criterion will require instrument testing. |

*Modified from Morrison et al. (1999)

3. Instrument Testing

The review panel, based on following indicators discussed instrument performance: (1) Coefficients of Reliability in the methods used, (2) assessment outcomes, (3) triangulation outcomes, (4) sequencing of Relevance Factors and (5) the analysis process. The following recommendations were made:

- The panel recommended including all Relevance Factors in the final instrument description.
- The instrument synopsis should include Indicator Measures.
- Based on instrument performance and evaluation outcomes, the indicators on the Level of Involvement by Type of Staff for Public Health Services were deleted.
- Considering the nature of the assessment, 'Partnerships' should be an Essential Factor in future applications, in both the Need Assessment and the Program Performance Sections.
- Course and Learning Objectives were shifted from the Program's Purpose to Curriculum Design, because Course and Learning Objectives direct and indicate Curriculum Content.
- Although documentation from three sources (Planned, Accredited and Actual Program) was used in the evaluation of the Program's Purpose and Objectives, the instrument should restrict itself to Accredited and Actual Program data.
- Course Description in the assessment of Curriculum Design was adopted for inclusion in the instrument.
- Assessment of the Instructional Objectives and Curriculum Content, whenever possible, should be based on a content analysis of course documentation. The development of analysis codes based on the Core Public Health Skills, to assess actual Learning Objectives and Content Areas, requires future study.
- In addition, both the faculty questionnaire and student self-assessment based on the list of Core Public Health Skills should be maintained.

- The instrument description should include a paragraph on the importance of triangulation of results from various sources and data collection methods.
- The use of ordinal scales with even categories will facilitate analysis.

D. An Evaluation Research on the Relevance of the Learning @ the Workplace Program

1. Content Analysis of the Program's Purpose and Objectives

In the content analyses, the inter-analyst reliability by the Holsti's test showed a Coefficient of Reliability = 0.94 and by Cohen's kappa = 0.86.

The documentation on the Program's Purpose and Objectives included three different sources namely: (1) documents on the planned program, (2) documents on the formal program and (3) documents or interviews with program developers, partners and implementers.

(1) Planned program

Refers to the project proposal 'Human Resources for Health Development Project' (1995). This was the base document that supported the contract signed by the three major program partners namely the (a) CPH - CU, (b) the PBRI (MOPH) and (c) the HSRI (MOPH).

(2) Formal program

Refers to the document that states the program's accreditation by CU in 1995.

(3) Actual program

Refers to interviews with developers, partners and faculty involved in the LWP and documentation on courses provided by faculty.

a. Program's Specialisation and Major

1) Program's Level

Does the degree offered by the Program answer the professional need? Where the professional need refers to the expectations of PCMO and former and present LWP students, namely a Degree at the Master's level.

The planned program provided a Master's Degree and Training Certificates for short courses.

The formal program provided a Master Degree.

The actual program provided a Master's level, therefore, it conformed the formal program.

2) Program's Type

Does the Program's characteristics address the need in public health practice? Where the need in public health practice is refers to the expectations of PCMO and past and present LWP students, namely a professional oriented degree.

Both, the planned program and the formal program stated that the program provides a professional degree.

3) Program's Major

Does the program's primary knowledge and practice areas address professional need? Where the need in professional need refers to the expectations of PCMO and an expert panel, namely capacity building for provincial human resource in public health in the context of health systems reform and decentralisation.

The first draft of the planned program focused on the individual professional, therefore, providing a major in Human Resource Development (Ts. King, 1995). Because of the need for health systems reform, the partners decided in the final planned program to provide a major in Health Systems Development (CPH, 1995 and interviews with partners). This conformed to the formal program plan, which also describes the major as Health Systems Development.

b. Learning @ the Workplace Program Objectives

1) General System Objectives

Does the Program's purpose match with the field perspectives? Where, field perspectives refer to the views of an expert panel and PCMO that expect that the LWP should contribute to health systems development and support health systems reform through local capacity building.

The planned program explained the overall aim as to contribute and support to the human resource development plan of the MOPH in Thailand in the context of external challenges and internal changes. Focusing on the human resource component in terms of the Ministry's constituent planning and management aspects for health systems reform and decentralisation.

The formal program did not elaborate on its purpose.

The actual program confirmed the overall aim of the program as described in the planned program. Respondents (partners and faculty) further explained that promotion of continuous learning among public health professionals would benefit not only individuals but also the health system. Integration of the work setting in the learning process was viewed as an important characteristic of the program.

2) Program objectives

Are the program objectives, specifications of the system objectives; and do the program objectives address the professional need? Where, professional need refers to needs assessment outcomes in terms of Services, required Level of Skills Mastery and Target Group. For example those Services that were considered to be 'Weakness' such as 'Monitor Health', 'Diagnose and Investigate', 'Partnerships', 'Enforce Laws', 'Evaluation' and 'Research' were of particular importance. Because Mid-level Management Staff was identified as the main Target Group, Skill Mastery should be at the level of Proficiency and Knowledgeable. The Focus Group Discussion with PCMO indicated that local educators could be a Target Group as well.

The planned program described the program's objectives as follows:

- (a) Strengthen the human resource development capacity of Colleges of Public Health and Nursing of the Institute of Human Resource Development, MOPH;
- (b) Increase health manpower development capacities of the staff of the above-mentioned colleges;
- (c) Develop models of post-graduate continuing education programs for provincial health systems reform;
- (d) Increase the health systems development capacities of provincial-level health man power;
- (e) Develop teaching-learning methods, materials, and technologies for the LWP;
- (f) Initiate a network of health and health related professionals that will contribute in building of a critical mass for Health Systems Development with particular reference to strategic planning and management, education and training and research.

The formal program offered a quite different description and states the program's objective as follows:

"To produce graduates in Public Health that have knowledge and capability in solving the public health problems of the country, by using related sciences. In addition, the graduates should have capacity in management, planning and improving their workplace in accordance with the socio-economic changes" (CU, 1995 p.1).

The formal program objectives differed significantly from the planned program objectives. The latter specifically addressed human resources from these local Colleges of Public Health and Nursing that belong to the MOPH, while the formal program objectives did not specify any category among public health staff.

The formal program objectives, in general terms, were more congruent with the views of PCMO and former and present students (need assessment). Although it needs to be

mentioned that focusing on local educators, as candidate students for the program, was considered important by several of the PCMO and that the need assessment pointed to Mid-level Management Staff as the focus group for the LWP.

c. Partnerships

In the content analyses, the inter-analyst reliability by the Holsti's test showed a Coefficient of Reliability PCMO 0.81, in-depth interviews 0.94 and by Cohen's kappa = PCMO 0.77 and in-depth interviews 0.86.

1) College-Workplace Liaison

Does the liaison between the College and partners meet the need of professionals?

Where need refers to communication, collaboration and co-operation between the CPH, PHO, PBRI and HSRI as perceived required by professionals such as MOPH, PCMO and faculty.

There was little documentary evidence that supported a good liaison between the CPH and its program partners. There were some reports from PBRI that provided evidence on co-ordination and communication efforts, such as a reflection on the evaluation of the Chonburi-I Program (Chuchat A., Watcharapai S., 1999) and a meeting to identify the role of local facilitators (PBRI, 1999). Further, documentation indicate efforts to train facilitators for the Chonburi-II (CPH, 1999) and the recently started program in the Southern Provinces (CPH, 2002).

There were various sources that indicate that the need for a good liaison is not being met, such as the evaluation report on the Chonburi-I program and responses from MOPH partners, PCMO, faculty and students.

Verbatim (pcmof5): There is no relevance between the curriculum and the students' need for provincial health system development. The College should collaborate with the Provincial Health Office to integrate the curriculum content with specific provincial projects. Maybe, my expectation is too high.

PCOM perceived problems in communication, collaboration and co-ordination between the CPH and the PHO, between Faculty and the PHO, between Faculty and Students as well as between Students and the PHO.

PCMO believed the curriculum not being

Verbatim (pcmof1): To be frank, the lecturer and thesis advisor should have more follow-up visits in order to understand the real situation in each site.

relevant to local need. Faculty did not communicate regular with the PHO. PCMO feel that Faculty was not well informed

Verbatim (pcmof2): From my experience, when the lecturer went to teach the students at the public health sites, they made their own appointment directly with the students. We only knew that there would be a class on that day. I never knew what we needed to contribute to the LWP.

about the local situation, therefore they were handicapped in instruction and advising students on their projects. Students did not communicate enough with the PHO to ensure that projects were meaningful.

Verbatim (pcmom1): I think that students overlook the importance of the Provincial Health Office. They never asked for any comments or guidelines. So, they missed the objectives of the LWP program. I think the students need our co-ordination because at least we can give them guidelines or ideas to do their projects.

MOPH partners' view was

that the relationships between the Program's partners have never been fully utilised. Active co-ordination was lacking among the national partners. Considering national and provincial levels, not all partners had a clear understanding of the LWP concepts and its underlying philosophy.

Verbatim (mophm1): The support for the program is not strong like in the beginning. It may be due to two reasons; first, HSRI is a research institute, so it can not take action unless the College and PBRI propose a plan or a research project; and second, HSRI has a new director. So, the Dean of College should vigorously co-ordinate with the program's partners, both HSRI and PBRI, for continuing of the support for the program.

The main problem with the program is its management, not its concept, as relationships were not established from the beginning. Consequently, it seemed to be difficult to accomplish the original objective of the program. The College has to take a more active role in co-ordination by organizing periodical meetings among all partners.

Verbatim (lwpff2): There's no local networking in place. Partnerships are underdeveloped. At provincial level there is no partnership at all.

Also faculty perceived problems in program co-ordination due to lack of networking.

2) Reciprocity

PCMO considered the LWP to have strong potentials but these had not been realised yet. They had high expectations in terms of gains for their staff and the provincial health system but these expectations did not materialise.

Verbatim (pcmof1): It seemed that the LWP Program could be integrated with my Health System Reform Project. At that time, I understood in such way. After that, I found that it did not relate to my project as I expected.

Verbatim (pcmom1): I expected that lecturers would cooperate with the students to do provincial projects.

2. Student Assessment

a. Students' Self Assessment

The sample consisted of all LWP students (12 in Chonburi-I, 9 in Chonburi-II, 11 in Ayutthia, 12 in Phayao and 25 in Isaan). The response rate for the total sample was 88.4%. Reliability testing resulted in a Cronbach's $\alpha = 0.94$.

The sample's mean age was 35 years. Thirty eight percent was male and 62% was female. All respondents graduated with a Bachelor degree and 92% held their degree in a health-related field while 8% had a non-health-related degree. Thirty eight percent of the respondents majored in Public Health or Public Health Administration in their undergraduate programs. Coming closely behind was Nursing with 36%, followed by Medicine and Pharmaceutical Sciences with 6% each.

The analysis that follows deals with the Chonburi-II site only (response rate 100%) because this group of students was most recently trained and the faculty questionnaire on learning objectives also focused on the Chonburi-II group. A synopsis on the analysis of the total group of students is presented in the summary section.

Detailed responses on the Chonburi-II students are presented in Table-5.49 and can be summarised as follows:

1) Skills Perceived as Don't Know

None of the 70 Skills were considered by respondents as 'Don't Know', although faculty stated that 10 Skills were not taught in the LWP.

Only for Basic Public Health Skill No. 1.9 'Use statistical software packages', 33.3% of the respondents stated that they Don't Know this Skill and 44.4% stated to have Awareness. This while those involved in the practice of public health expected graduates to be knowledgeable.

2) Skills Perceived as Awareness

Respondents perceived their Level of Mastery for 15/70 Skills as Awareness. Of these, according to those involved in the practice of public health, 13 Skills required Knowledgeable and 2 Skills required Proficiency, while faculty stated that 3/15 Skills were Not Taught in the LWP. Skills with Awareness as perceived Level of Mastery are distributed as follows:

| <i>Awareness as Perceived Level of Mastery</i> | | | | |
|--|-----------------|-------------------|---------------|--------------------------------------|
| <i>Competency Domain</i> | <i># Skills</i> | <i>Not Taught</i> | <i>Taught</i> | <i>Required Level of Mastery</i> |
| Basic Public Health Skills | 4/13 | 3/4 | 1/4 | Knowledgeable |
| Analytical Skills | 2/12 | 0/2 | 2/2 | Knowledgeable |
| Policy Development Skills | 5/7 | 0/5 | 5/5 | Knowledgeable |
| Strategic Management Skills | 3/13 | 0/3 | 3/3 | Knowledgeable (2) Proficiency (1) |
| Operational Management Skills | 1/9 | 0/1 | 1/1 | Proficiency |

3) Skills Perceived as Knowledgeable

Of the 70 Skills, respondents considered themselves Knowledgeable in 41 Skills. According to those involved in the practice of public health 29/41 required Knowledgeable and 12/41 required Proficiency, while faculty stated that 6/41 Skills are Not Taught in the LWP. Skills with Knowledgeable as perceived Level of Mastery are distributed as follows:

| <i>Knowledgeable as Perceived Level of Mastery</i> | | | | |
|--|-----------------|-------------------|---------------|--------------------------------------|
| <i>Competency Domain</i> | <i># Skills</i> | <i>Not Taught</i> | <i>Taught</i> | <i>Required Level of Mastery</i> |
| Basic Public Health Skills | 8/13 | 0/8 | 8/8 | Knowledgeable |
| Analytical Skills | 8/12 | 2/8 | 6/8 | Knowledgeable (7) Proficiency (1) |
| Social Skills | 1/3 | 0/1 | 1/1 | Knowledgeable |
| Strategic Management Skills | 7/13 | 0/7 | 7/7 | Knowledgeable (6) Proficiency (1) |
| Communication Skills | 6/6 | 1/6 | 5/6 | Knowledgeable (2) Proficiency (4) |
| Partnership Skills | 6/6 | 4/6 | 2/6 | Knowledgeable (3) Proficiency (3) |
| Operational Management Skills | 5/9 | 0/5 | 5/5 | Knowledgeable (2) Proficiency (3) |

4) Skills Perceived as Proficiency

For none of the Skills respondents perceived Proficiency as their Level of Mastery, although according to those involved in the practice of public health expected graduates to be proficient in 16/70 Skills.

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | | |
|------------------------|---|--|-----|------------|------|---|-----------|---|---------------|---|-------------|---|-----------------------------|----------------------------|---|
| | | Missing | | Don't know | | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² | Attributed to Weak PH Services ³ |
| | | N | % | N | % | N | % | N | % | N | % | | | | |
| 1 | Basic Public Health Skills | | | | | | | | | | | | | | |
| 1.1 | Identify responsibilities within public health. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 1.1 | | | K | 2.26 | 3 | |
| 1.2 | Use basic research designs and methods. | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | | | K | 2.26 | 4 | |
| 1.3 | Apply basic public health sciences. | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | | | K | 2.15 | 4 | |
| 1.4 | Assess the health status of populations. | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | | | K | 2.25 | 4 | |
| 1.5 | Apply critical thinking. | 0 | 0.0 | 0 | 0.0 | 9 | 100 | 0 | 0.0 | | | K | 2.08 | 6 | |
| 1.6 | Identify scientific evidence. | 0 | 0.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | | | K | 1.96 | 4 | |
| 1.7 | Identify limitations of research. | 0 | 0.0 | 5 | 55.6 | 4 | 44.4 | 0 | 0.0 | | | K | 2.05 | 2 | |
| 1.8 | Apply risk assessment. | 0 | 0.0 | 1 | 11.1 | 7 | 77.8 | 1 | 11.1 | | | K | 2.09 | 1 | |
| 1.9 | Use public health information packages. | 0 | 0.0 | 3 | 33.3 | 4 | 44.4 | 2 | 22.2 | | | K | 2.15 | 4 | |
| 1.10 | Design a surveillance system. | 0 | 0.0 | 1 | 11.1 | 5 | 55.6 | 3 | 33.3 | | | K | 2.07 | 2 | |
| 1.11 | Operate a surveillance system. | 0 | 0.0 | 1 | 11.1 | 5 | 55.6 | 3 | 33.3 | | | K | 2.18 | 2 | |
| 1.12 | Use computer applications. | 0 | 0.0 | 0 | 0.0 | 8 | 88.9 | 1 | 11.1 | | | K | 2.24 | 4 | |
| 1.13 | Apply ethical conduct. | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | | | K | 2.12 | 4 | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|------------------------|--|--|------|------------|------|-----------|------|---------------|------|-------------|------|---|----------------------------|---|
| | | Missing | | Don't know | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² | Attributed to Weak PH Services ³ |
| | | N | % | N | % | N | % | N | % | N | % | | | |
| 2 | Analytic Skills | | | | | | | | | | | | | |
| 2.1 | Define a problem. | 1 | 0.0 | 3 | 37.5 | 4 | 50.0 | 1 | 12.5 | P | 2.42 | 5 | | |
| 2.2 | Determine appropriate use of data. | 1 | 0.0 | 4 | 50.0 | 3 | 37.5 | 1 | 12.5 | K | 2.31 | 4 | | |
| 2.3 | Select and define variables. | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | K | 2.21 | 4 | | |
| 2.4 | Use basic research designs and methods. | 0 | 0.0 | 4 | 44.4 | 5 | 55.6 | 0 | 0.0 | K | 2.20 | 4 | | |
| 2.5 | Partner with communities. | 0 | 11.1 | 2 | 22.2 | 4 | 44.4 | 2 | 22.2 | K | 2.16 | 4 | | |
| 2.6 | Use appropriate data collection. | 0 | 0.0 | 4 | 44.4 | 5 | 55.6 | 0 | 0.0 | K | 2.06 | 4 | | |
| 2.7 | Make relevant inferences from data. | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | K | 2.27 | 4 | | |
| 2.8 | Identify relevant data sources. | 0 | 0.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | K | 2.18 | 4 | | |
| 2.9 | Apply ethical principles. | 0 | 0.0 | 1 | 11.1 | 8 | 88.9 | 0 | 0.0 | K | 2.12 | 4 | | |
| 2.10 | Evaluate data. | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | K | 2.23 | 3 | | |
| 2.11 | Illuminate issues from data. | 0 | 0.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | K | 2.05 | 3 | | |
| 2.12 | Obtain and interpret community risks and benefits. | 0 | 0.0 | 4 | 44.4 | 5 | 55.6 | 0 | 0.0 | K | 2.17 | 4 | | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|------------------------|--|--|-----|------------|------|-----------|------|---------------|------|-------------|---|---|----------------------------|---|
| | | Missing | | Don't know | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² | Attributed to Weak PH Services ³ |
| | | N | % | N | % | N | % | N | % | N | % | | | |
| 3 | Policy Development Skills | | | | | | | | | | | | | |
| 3.1 | Collect, summarise and interpret information. | 0 | 0.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | | K | 2.21 | 3 | |
| 3.2 | State policy options. | 0 | 0.0 | 6 | 66.7 | 2 | 22.2 | 0 | 0.0 | | K | 2.04 | 0 | |
| 3.3 | Articulate implications of policy options. | 0 | 0.0 | 5 | 55.6 | 3 | 33.3 | 0 | 0.0 | | K | 2.05 | 0 | |
| 3.4 | State the expected outcome of policy options. | 0 | 0.0 | 5 | 55.6 | 4 | 44.4 | 0 | 0.0 | | K | 1.98 | 0 | |
| 3.5 | Decide on the appropriate course of action. | 0 | 0.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | | K | 2.19 | 2 | |
| 3.6 | Utilise current techniques in analysis and planning. | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | | K | 2.32 | 0 | |
| 3.7 | Identify policies for specific programs. | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | | K | 2.27 | 1 | |
| 4 | Social Skills | | | | | | | | | | | | | |
| 4.1 | Apply appropriate methods for interacting sensitivity, effectively and professionally. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | | K | 2.26 | 5 | |
| 4.2 | Identify the role of cultural factors in service delivery. | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | | K | 2.04 | 3 | |
| 4.3 | Adapt problem solving to fit cultural differences. | 0 | 0.0 | 3 | 33.3 | 4 | 44.4 | 1 | 11.1 | | K | 2.14 | 2 | |
| 5 | Strategic Management Skills | | | | | | | | | | | | | |
| 5.1 | Prepare and implement emergency plans. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | | K | 2.30 | 0 | |
| 5.2 | Develop plans. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | | K | 2.32 | 0 | |
| 5.3 | Translate policy into organisational plans. | 0 | 0.0 | 2 | 22.2 | 5 | 55.6 | 1 | 11.1 | | P | 2.35 | 0 | |
| 5.4 | Monitor and evaluate programs. | 0 | 0.0 | 5 | 55.6 | 3 | 33.3 | 1 | 11.1 | | P | 2.35 | 1 | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | | | |
|------------------------|--|--|---|------|------------|------|---|-----------|---|---------------|---|---|---|-----------------------------|----------------------------|---|
| | | Missing | | | Don't know | | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² | Attributed to Weak PH Services ³ |
| | | N | N | % | N | % | N | % | N | % | N | % | | | | |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 0 | 1 | 11.1 | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | K | 2.16 | 1 | | | |
| 5.6 | Apply theory of organisation. | 0 | 0 | 0.0 | 1 | 11.1 | 7 | 77.8 | 1 | 11.1 | K | 2.16 | 0 | | | |
| 5.7 | Contribute to organisational performance standards. | 0 | 0 | 0.0 | 3 | 33.3 | 5 | 55.6 | 1 | 11.1 | K | 2.15 | 1 | | | |
| 5.8 | Promote team learning and organisation learning. | 0 | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | K | 2.24 | 1 | | | |
| 5.9 | Create key values and shared vision. | 0 | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | K | 2.22 | 1 | | | |
| 5.10 | Identify issues through strategic planning. | 0 | 0 | 0.0 | 6 | 66.7 | 2 | 22.2 | 1 | 11.1 | K | 2.23 | 0 | | | |
| 5.11 | Use appropriate methods that effect change. | 0 | 0 | 0.0 | 6 | 66.7 | 3 | 33.3 | 0 | 0.0 | K | 2.18 | 0 | | | |
| 5.12 | Ensure participation of key stakeholders. | 0 | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | K | 2.19 | 1 | | | |
| 5.13 | Create a culture of ethical standards. | 0 | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | K | 2.14 | 1 | | | |
| 6 | Communication Skills | | | | | | | | | | | | | | | |
| 6.1 | Communicate effectively. | 0 | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | P | 2.49 | 1 | | | |
| 6.2 | Solicit input from individuals and organisations. | 0 | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | P | 2.41 | 1 | | | |
| 6.3 | Advocate for public health. | 1 | 1 | 12.5 | 3 | 37.5 | 3 | 37.5 | 1 | 12.5 | K | 2.19 | 1 | | | |
| 6.4 | Lead and participate in-groups. | 0 | 1 | 11.1 | 2 | 22.2 | 5 | 55.6 | 1 | 11.1 | K | 2.30 | 1 | | | |
| 6.5 | Use appropriate channels to disseminate information. | 0 | 0 | 0.0 | 3 | 33.3 | 6 | 66.7 | 0 | 0.0 | K | 2.25 | 2 | | | |
| 6.6 | Listen to others in an unbiased manner. | 0 | 0 | 0.0 | 0 | 0.0 | 9 | 100 | 0 | 0.0 | P | 2.35 | 2 | | | |
| 6.7 | Make accurate and effective presentations. | 0 | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | P | 2.43 | 1 | | | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|------------------------|---|--|------|------------|------|-----------|------|---------------|------|-------------|------|---|----------------------------|---|
| | | Missing | | Don't know | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² | Attributed to Weak PH Services ³ |
| | | N | % | N | % | N | % | N | % | N | % | | | |
| 7 | Partnership Skills | | | | | | | | | | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 0 | 0.0 | 0 | 0.0 | 8 | 88.9 | 1 | 11.1 | P | 2.37 | 1 | | |
| 7.2 | Collaborate with community to promote health. | 1 | 0.0 | 1 | 12.5 | 6 | 75.0 | 1 | 12.5 | K | 2.23 | 1 | | |
| 7.3 | Mobilise organisations within the community. | 0 | 11.1 | 2 | 22.2 | 6 | 66.7 | 0 | 0.0 | K | 2.32 | 1 | | |
| 7.4 | Use management skills to build partnerships. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | P | 2.39 | 1 | | |
| 7.5 | Identify community resources. | 0 | 11.1 | 2 | 22.2 | 5 | 55.6 | 1 | 11.1 | K | 2.23 | 1 | | |
| 7.6 | Conduct community assessment. | 0 | 0.0 | 1 | 11.1 | 7 | 77.8 | 1 | 11.1 | P | 2.37 | 1 | | |
| 8 | Operational Management Skills | | | | | | | | | | | | | |
| 8.1 | Develop and present a budget. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | P | 2.52 | 1 | | |
| 8.2 | Manage programs without budget constraints. | 0 | 11.1 | 3 | 33.3 | 4 | 44.4 | 1 | 11.1 | K | 2.24 | 0 | | |
| 8.3 | Apply budget processes. | 0 | 0.0 | 2 | 22.2 | 6 | 66.7 | 1 | 11.1 | K | 2.28 | 0 | | |
| 8.4 | Determine budget priorities. | 0 | 0.0 | 4 | 44.4 | 4 | 44.4 | 1 | 11.1 | P | 2.36 | 0 | | |
| 8.5 | Monitor program performance. | 0 | 11.1 | 3 | 33.3 | 4 | 44.4 | 1 | 11.1 | P | 2.42 | 1 | | |
| 8.6 | Develop proposals for funding. | 0 | 0.0 | 5 | 55.6 | 3 | 33.3 | 1 | 11.1 | P | 2.44 | 2 | | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.54: Analysis of Chonburi-II Program Students' Perceptions on Achieved Levels of Mastery in Public Health Skills vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| Skill No by Competency | Public Health Skills by Competency Domain | Students' Perceptions on Achieved Level of Mastery | | | | | | | | | | Analysis of Mastery Required by Mid-level Staff | | | |
|------------------------|--|--|---|-----|------------|------|---|-----------|---|---------------|---|---|---|-----------------------------|----------------------------|
| | | Missing | | | Don't know | | | Awareness | | Knowledgeable | | Proficiency | | Level Required ¹ | Weighted Mean ² |
| | | N | N | % | N | % | N | % | N | % | N | % | | | |
| 8.7 | Apply basic human relation skills. | 0 | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | K | 2.32 | 1 | | |
| 8.8 | Manage information systems for collection, retrieval, and use of data for decision-making. | 0 | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | P | 2.36 | 2 | | |
| 8.9 | Apply ethical conduct. | 0 | 0 | 0.0 | 2 | 22.2 | 7 | 77.8 | 0 | 0.0 | P | 2.34 | 1 | | |

¹ P = Proficiency; K = Knowledgeable

² The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

³ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.55: Synopsis on Levels of Skill Mastery by Competency Domain as Perceived Required by Stakeholders, Taught by Faculty and Achieved by Students

| Competency Domain | Required Level of Mastery Perceived by stakeholders¹ | | Taught Level of Mastery Perceived by faculty² | | Achieved Level of Mastery Perceived by students³ | |
|-------------------------------|--|----|---|---|--|---|
| Basic Public Health Skills | Not Core | 0 | Not Taught | 3 | Don't Know | 1 |
| | Awareness | 0 | Awareness | 2 | Awareness | 4 |
| | Knowledgeable | 13 | Knowledgeable | 3 | Knowledgeable | 8 |
| | Proficiency | 0 | Proficiency | 5 | Proficiency | 0 |
| Analytical Skills | Not Core | 0 | Not Taught | 2 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 1 | Awareness | 3 |
| | Knowledgeable | 12 | Knowledgeable | 3 | Knowledgeable | 9 |
| | Proficiency | 0 | Proficiency | 6 | Proficiency | 0 |
| Policy Development Skills | Not Core | 0 | Not Taught | 0 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 3 | Awareness | 7 |
| | Knowledgeable | 7 | Knowledgeable | 3 | Knowledgeable | 0 |
| | Proficiency | 0 | Proficiency | 1 | Proficiency | 0 |
| Social Skills | Not Core | 0 | Not Taught | 0 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 1 | Awareness | 1 |
| | Knowledgeable | 3 | Knowledgeable | 2 | Knowledgeable | 2 |
| | Proficiency | 0 | Proficiency | 0 | Proficiency | 0 |
| Strategic Management Skills | Not Core | 0 | Not Taught | 0 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 6 | Awareness | 6 |
| | Knowledgeable | 11 | Knowledgeable | 7 | Knowledgeable | 9 |
| | Proficiency | 2 | Proficiency | 0 | Proficiency | 0 |
| Communication Skills | Not Core | 0 | Not Taught | 1 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 2 | Awareness | 1 |
| | Knowledgeable | 3 | Knowledgeable | 4 | Knowledgeable | 6 |
| | Proficiency | 4 | Proficiency | 0 | Proficiency | 0 |
| Partnership Skills | Not Core | 0 | Not Taught | 4 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 2 | Awareness | 0 |
| | Knowledgeable | 3 | Knowledgeable | 0 | Knowledgeable | 6 |
| | Proficiency | 3 | Proficiency | 0 | Proficiency | 0 |
| Operational Management Skills | Not Core | 0 | Not Taught | 0 | Don't Know | 0 |
| | Awareness | 0 | Awareness | 7 | Awareness | 3 |
| | Knowledgeable | 3 | Knowledgeable | 2 | Knowledgeable | 6 |
| | Proficiency | 6 | Proficiency | 0 | Proficiency | 0 |

Legend:

1= Based on the weighted mean;

2= Based on the highest Learning Objective taught by at least on faculty member;

3= Based on proportions $\geq 50\%$, except for these Skills with a split between two Levels of Mastery the mean was used to determine the Level of Mastery.

Based on the responses presented in Table-5.49 and the synopsis on required, taught and achieved Levels of Skill Mastery, presented in Table-5.50, problem areas in Skill achievement can be summarised as follows:

| Competency Domains | # of Skills with a lower Level of Mastery Achieved than Required |
|-------------------------------|--|
| Basic Public Health Skills | 5/13 |
| Analytical Skills | 3/12 |
| Policy Development Skills | 7/7 |
| Social Skills | 1/3 |
| Strategic Management Skills | 8/13 |
| Communication Skills | 5/6 |
| Partnership Skills | 3/6 |
| Operational Management Skills | 9/9 |

There was not a single Competency Domain that was free of achieved Level of Skill Mastery being lower than the required Level of Skill Mastery.

Based on the findings, Policy Development (100%), Operational Management (100%) and Communication Skills (83.3%) were the Competency Domains demonstrating clear shortcomings in achievement of the required Level of Skill Mastery.

Competency Domains such as Strategic Management Skills (61.5%), Partnership Skills (50%) and Basic Public Health Skills (38.5%) were the next wave of Skills that show important shortcomings in achievement of the required Level of Skill Mastery.

Finally, Social Skills (33.3%) and Analytical Skills (25%) showed moderate shortcomings in achievement of the required Level of Skill Mastery.

Considering the total sample of respondents a few statistically significant differences (ANOVA and Scheffé) were found between student groups, which can be summarised as follows:

| Competency Domain | Skill # | p value | Scheffé |
|----------------------------|---------|---------|--|
| Basic Public Health Skills | 1.10 | 0.003 | Ayutthia<Chonburi-I Ayutthia<Isaan |
| | 1.11 | 0.000 | Ayutthia<Chonburi-I Ayutthia<Isaan Ayutthia<Phayao |
| | 1.13 | 0.000 | Ayutthia<Chonburi-I Chonburi-II<Chonburi-I |
| Analytical Skills | 2.11 | 0.005 | Ayutthia<Chonburi-I |
| Policy development Skills | 3.5 | 0.006 | Chonburi-II<Chonburi-I |
| Operational Mgt. Skills | 8.4 | 0.005 | Ayutthia<Chonburi-I Ayutthia<Isaan Ayutthia<Phayao |

An analysis (t-test) of the total student sample (61 on achieved Level of Skill Mastery) with the responses of Public Health Professionals (119 on the required Level of Skill Mastery) showed a statistically significant difference for 62/70 Skills at $p \leq 0.01$. The perceptions on achieved Level of Skills Mastery, for these 62 Skills, was significant lower than the perceptions on required Level of Skill Mastery.

3. Curriculum Design

a. Introduction

In the content analyses, the inter-analyst reliability by the Holsti's test showed a Coefficient of Reliability = 0.94 and by Cohen's kappa = 0.86.

The LWP was a non-traditional program. Therefore, its design did not fit with the traditional accreditation criteria of the University. The solution to deal with the incompatibility was a conversion key to link program design with accreditation criteria. For the LWP this conversion key is presented in Table-5.51 as follows:

Table-5.56: Conversion Key for the LWP Program Accreditation

| Conversion Key for the LWP Program Accreditation | | |
|--|----------------|---|
| Courses Accredited by the University | Credits | Actual Courses of the LWP |
| 900-501 Health Problems, Determinants and Trends | 3 | Situation Analysis Population (SAP) |
| 900-502 Information, Research and Measurement | 3 | |
| 900-503 Policy and Strategic Planning | 3 | Situation Analysis Organisation (SAO) |
| 900-504 Implementation and Management | 3 | |
| 900-505 Health Systems Development | 3 | Health Systems Development (HSD) |
| 900-515 Seminars in Health Systems Development | 3 | Situation Analysis Individual (SAI) |
| 900-521 Fundamental Skills for Science and Research | 3 | Project Evaluation (PE) |
| 900-522 Fundamental Skills for Administration and Management | 3 | Project Implementation (PI) |
| 900-811 Thesis | 12 | Project Development (PD) |
| Total Credits | 36 | |

b. Course Descriptions

A comparison between the descriptions of the accredited against the actual courses is presented in Table-5.52. Descriptions differed between all accredited and actual courses descriptions except for the course 900-505 'Health Systems Development'.

Among those actual course descriptions that differed from the accredited courses, courses SAO, SAI and PI showed more deviations than the other courses.

Table-5.57: Accredited vs. Actual Course descriptions

| Accredited vs. Actual Course Descriptions | |
|---|--|
| Courses Accredited by the University | Actual Courses of the LWP |
| <p>900-501 Health Problems, Determinants and Trends Systems concepts and analysis, types of health problems and their determinants, micro and macro trends in health and populations, development and change and their impacts, indicators of health, health determinants and change.</p> | <p>Situation Analysis Population (SAP) Health determinants; assessment methodologies; measurement and indicators; data collection and analysis techniques; prioritisation and health policy, policy implementation and strategic planning; PHC management and health promotion; integration and co-ordination in public health; and monitoring and evaluation.</p> |
| <p>900-502 Information, Research and Measurement Statistical methods; basic concepts of quantitative and qualitative measurement; methods of inquiry; research design; epidemiology; economic, social and management research methods; demography and population studies; community and organisation-based study; information needs; methods and techniques for health service systems planning and management.</p> | |
| <p>900-503 Policy and Strategic Planning Principles, methods and techniques for decision making and creative problem solving; principles of policy making; legal and ethical issues pertaining to public health policy and practice; health care financing; information requirements for policy making; strategic planning principles, methods and techniques; strategic planning practice and threats.</p> | <p>Situation Analysis Organisation (SAO) Organisational behaviour; team building; SWOT analysis; strategic planning; principles of management; negotiation, management models; managing change and program evaluation.</p> |
| <p>900-504 Implementation and Management Structures and functions of health care delivery systems; developments approaches and health development interventions; the practice of operational planning and management; program and project financial management; leadership and the roles of a manager; organisational development; negotiation and conflict resolution; networking and team building; financial, technological and human resource development strategies.</p> | |
| <p>900-505 Health Systems Development Learning models; critical appraisal of information; argument and reasoning; systems theory; problem analysis and problem solving techniques; interpersonal communication; technical communication and software; group theory and group dynamics; and academic writing.</p> | <p>Health Systems Development (HSD) Learning models; critical appraisal of information; argument and reasoning; systems theory; problem analysis and problem solving techniques; interpersonal communication; technical communication and software; group theory and group dynamics; and academic writing.</p> |

Table-5.57: Accredited vs. Actual Course descriptions (Cont.)

| Accredited vs. Actual Course Descriptions | |
|--|---|
| Courses Accredited by the University | Actual Courses of the LWP |
| 900-515 Seminars in Health Systems Development Integration of the contents of the subject material provided in didactic course, both required and elective, in problem solving context so as to provide an opportunity for progressively advanced learning through analysis, synthesis and application in real life situation found in students' own working situations or on-going research projects. | Situation Analysis Individual (SAI) Service provider- receiver relationship; team building; teamwork; team performance; and finally personal professional performance and development. Basic concepts used in this course include quality of life; health promotion; qualitative research techniques and analysis, active listening; teamwork; leadership; human resource development; and performance appraisal. |
| 900-521 Fundamental Skills for Science and Research Principles of inquiry and scientific methods; concepts and models; ethics; quantitative and qualitative approaches; data collection, analysis and interpretation techniques; basic computer programs and presentation of results. | Project Evaluation (PE) Designing and conducting program monitoring and evaluation, including development of indicators, evaluation research, report writing and oral presentation skills |
| 900-522 Fundamental Skills for Administration and Management Strategic planning; budget writing; financial statement analysis; costing; operational management; negotiation techniques; and leadership. | Project Implementation (PI) Fundamental management skills (manage change, activity plans, resources) |
| 900-811 Thesis No description documented | Project Development (PD) Project proposal writing; development of rationale; logical framework; academic writing; formatting; computer skills; oral presentation skills. |

A broad based comparison of the formal courses with the 11 Services showed that the Services # 3 'disseminate information', # 4 'Partnerships', # 5 Enforce Laws' and # 7 Access to Services' were not well represented in the courses. This can be summarised as follows:

| <i>Accredited Courses</i> | <i>Public Health Services</i> |
|---|--|
| 900-501 Health Problems, Determinants and Trends | Monitor Health Diagnose and Investigate Evaluation |
| 900-502 Information, Research and Measurement | Diagnose and Investigate Evaluation Research |
| 900-503 Policy and Strategic Planning | Policy Development Evaluation Planning and Management |
| 900-504 Implementation and Management | Planning and Management Assure Human Resources |
| 900-505 Health Systems Development | Applicable to all Services, except Enforce Laws and Access to Services |
| 900-515 Seminars in Health Systems Development | Applicable to all Services, except Enforce Laws and Access to Services |
| 900-521 Fundamental Skills for Science and Research | Evaluation Research |
| 900-522 Fundamental Skills for Administration and Management | Policy Development Assure Human Resources Planning and Management |
| 900-811 Thesis | |

c. Instructional Objectives

1) Course Objectives

Are course objectives based on the program objectives?

Are course objectives addressing needs-assessment outcome in terms of Public Health Services and Learning Needs?

The actual course descriptions and objectives were used against program objectives and need assessment outcomes. Based on the information available, this analysis showed that:

- In general terms the course objectives were congruent with the content of the formal program objectives such as Skills in problem solving, related sciences, planning and management.
- Following Services were not well represented in the total set of Course Objectives: # 3 Disseminate Information, # 4 Partnerships, # 6 Enforce Laws, # 7 Access to Services, and # 7 Assure Human Resources.
- In terms of Learning Need, although Course 900-505 provided an introduction to most Learning Need, only 'Applied Research Skills', 'Analytical Skills, Evaluation Skills' and 'Management Skills' could be verified for the other courses.
- This does not mean of course that the perceived Learning Need such as 'Problem Solving Skills'; 'Communication Skills', 'Social Science Skills' and 'Project Formulation Skills' were not included in the curriculum but no documented information was available.

The Services and Learning Need addressed by the various courses can be summarised as follows:

| Course | Course Objective | Public Health Services and Learning Needs Addressed |
|----------------------|--|---|
| 900-501 & 502 SAP | The main objective of this course is to study and analyse the health situation of target population in selected aspects using secondary information and performing critical appraisal of the existing information. | Monitor Health Diagnose and Investigate Evaluation Research (Applied quantitative and qualitative Research Skills) (Analytical Skills) |
| 900-503 & 504 SAO | 1. An understanding of basic strategic management models. 2. The ability to analyse the external and internal environments of organisation and to develop alternative strategies, | Policy Development Planning and management (Analytical Skills) (Strategic and Operational Management Skills) |

| | | |
|----------------|--|--|
| | implementation and assessment. | |
| | 3. An understanding of strategic management in multinational and small business setting and able to apply to public health organisation setting. | |
| 900-505 HSD | <ol style="list-style-type: none"> 1. Illustrate theories of learning, critical thinking and creative thinking, and learning styles in personal and group learning situations; 2. Analyse learning teams in educational and professional settings; 3. Analyse learning tasks in terms of problem solving processes; 4. Analyse social entities as systems at the individual, family, group, and organisational levels; 5. Analyse perception and communication in personal and interpersonal, and public contexts; 6. Manage learning resources including information, technology, people, time and finances; 7. Appreciate professional need for continuous learning and self-development; 8. Use a desktop computer, printer, and modem; 9. Present an argument to a professional audience in verbal and written media. | Applicable to all Services, except Enforce Laws and Access to services and applicable to most Learning Needs |
| 900-515 SAI | Not documented | |
| 900-521 PE | <ol style="list-style-type: none"> 1. Identify factors that determine research priorities in a particular community 2. Critically review different research methodologies both quantitative and qualitative 3. Conduct research objectives 4. Appropriately apply research methodology to a real problem 5. Appropriately apply different data collection instruments to a real problem | Partnerships Research Evaluation (Applied quantitative and qualitative Research Skills) (Analytical Skills) (Evaluation Skills) |
| 900-522 PI | Not documented | |
| 900-811 PD | Not documented | |

Legend: () are perceived Learning Needs identified through Focus groups

2) *Learning Objectives Based upon Faculty Questionnaire*

For several courses there were no Learning Objectives documented or documentation was incomplete. Therefore, 6 Faculty Members, including myself, who were involved in the teaching in the Chonburi-II Program, were asked to answer a questionnaire on Learning Objectives. We all responded to all items in the questionnaire about the teaching of Skills. Both the unit and item response rates were 100%. For the faculty questionnaire, reliability could not be tested because each teacher answered the questions from a distinctive perspective.

Based upon the views of Faculty Members 60/70 (85.7%) of the Skills were Taught and 10/70 (14.3%) were Not Taught. The detailed responses are presented in Table-5.53.

a) Skills which were Not Taught by Faculty

Ten of the Skills were Not Taught. These are shown below in Table-5.54 by Competency Domain.

Eight of these Not Taught Skills were at the 'Knowledgeable' Level according to those involved in the practice of public health, with a Mean Adjusted Score ranging from 2.07 to 2.32. Out of these 8 Skills, experts (Section 5.7) have attributed 6 to Services that were considered to be a 'Weakness'.

The other two Not Taught Skills, were both at the 'Proficiency' Level. They were:

- (i) Skill 7.1 'Maintain linkages with key stakeholders' with a Weighted Mean Score of 2.37 but attributed to Services that perform Satisfactory and
- (ii) Skill 7.6 'Conduct a community assessment' with a Weighted Mean Score of 2.37 and attributed to 1 Practice that was considered as a current Weakness.

It is of interest that none of the untaught Skills fell within the following Competency Domains:

-
- 3. Policy Development Skills
 - 4. Social Skills
 - 5. Strategic Management Skills
 - 8. Operational Management Skills
-

b) Skills which were Taught by Faculty

Sixty of the 70 Skills were taught by at least one Faculty Member. Quite a number of Skills were taught by more than one Faculty Member (Table-5.55)

- By one Faculty Member 27 (38.6%)
- By two faculty Members 18 (25.7%)
- By three to five Faculty Members 15 (21.4%)

Because more than one teacher may have taught a Skill, the highest level of teaching as presented in Table-5.56 grouped the Skills as follows:

- 24 (40.0%) were taught at the Describe Level
- 24 (40.0%) were taught at the Discuss Level and
- 12 (20.0%) were taught at the Do Level

Where a Skill was taught by more than one Faculty, the Level was more often different than it was the same.

Table-5.57 presents an overview of Skills, by Competency Domain, taught at a lower Level than required.

Taking into account that the Learning Objective Levels equals the Levels of Mastery i.e. Describe is equal to Awareness, Discuss is equal to Knowledgeable and Do is equal to Proficiency, analysis on actual vs. required Level of Mastery for Skills shows:

- (i) For the 16 Skills that required 'Proficiency', 7/16 (43.8%) were taught at the level of Awareness and 6/16 (37.5%) were taught at the level of Knowledgeable.

- (ii) For the 54 Skills that required being 'Knowledgeable', 17/54 (31.5%) were taught at the level of Awareness.

As described in detail in Section 5.7, Skills have been linked with Services. That study resulted in the identification of these Skills attributed to Services that were considered to have a Weak Level of Performance in Thailand. Therefore, these Skills were of particular interest. Out of 70 Skills, 57 were attributed to Weak Services and were distributed across Competency Domains as follows:

| Competency Domain | No. Skills Attributed to Weak Services |
|----------------------------------|--|
| 1. Basic Public Health Skills | 13/13 |
| 2. Analytical Skills | 12/12 |
| 3. Policy Development Skills | 3/7 |
| 4. Social Skills | 3/3 |
| 5. Strategic Management Skills | 7/13 |
| 6. Communication Skills | 7/7 |
| 7. Partnership Skills | 6/6 |
| 8. Operational Management Skills | 6/9 |
| Total | 57/70 |

An analysis on these Skills shows the following:

As summarised in Table-5.58, of the 57 Skills attributed to Services, which were perceived to be a Weakness (Section 5.7), Faculty believed:

- (i) 26 being taught at a level considered as required, at least by one Faculty Member,
- (ii) 21 being taught at a lower Level of Mastery than required and
- (iii) 10 Skills being not taught at all.

Of the 10 Skills attributed to Weak Services and not taught belong to following Competency Domains:

- Basic Public Health Skills 3/13
- Analytical Skills 2/12
- Communication Skills 1/7
- Partnership Skills 4/6

The 21 Skills attributed to Weak Services and taught at a lower level than required belong to following Competency Domains:

- Basic Public Health Skills 2/13
- Analytical Skills 1/12
- Policy Development Skills 1/3
- Social Skills 1/3
- Strategic management Skills 5/7
- Communication Skills 4/7
- Partnership Skills 2/6
- Operational Management Skills 5/6

As summarised in Table-5.56, further analysis on: actual taught vs. required Level of Mastery for Skills attributed to Services that were considered to have a current Level of Performance as a 'Weakness' shows that:

- (i) For Skills that required 'Proficiency' 2/13 or 15.4% were not taught and 6/13 or 46.2% were taught at the level 'Awareness' and 4/13 or 30.8% were taught at the level 'Knowledgeable'.
- (ii) For Skills that require being 'Knowledgeable' 8/44 or 18.2% were not taught, and 11/44 or 25.0% were taught at the level of Awareness.

Table-5.58: Analysis of Faculty's Perceptions regarding Teaching of Skills in the Chonburi-II Program vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health

| No | Public Health Skills by Competency Domain | Analysis of Faculty Perceptions | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|----------|--|---------------------------------|-----|---------------------------------|---------|----|---|----------------------------|---|
| | | Skills Taught ⁴ | | Level being Taught ⁵ | | | Level Required ⁶ | Weighted Mean ⁷ | Attributed to Weak ⁸ PH Services |
| | | No | Yes | Describe | Discuss | Do | | | |
| 1 | Basic Public Health Skills | | | | | | | | |
| 1.1 | Identify responsibilities within public health. | 5 | 1 | 1 | 0 | 0 | K | 2.26 | 3 |
| 1.2 | Use basic research designs and methods. | 1 | 5 | 2 | 1 | 2 | K | 2.26 | 4 |
| 1.3 | Apply basic public health sciences. | 4 | 2 | 0 | 2 | 0 | K | 2.15 | 4 |
| 1.4 | Assess the health status of populations. | 3 | 3 | 1 | 1 | 1 | K | 2.25 | 4 |
| 1.5 | Apply critical thinking. | 3 | 3 | 0 | 2 | 1 | K | 2.08 | 6 |
| 1.6 | Identify and access relevant scientific evidence. | 3 | 3 | 2 | 1 | 0 | K | 1.96 | 4 |
| 1.7 | Identify limitations of research. | 4 | 2 | 1 | 1 | 0 | K | 2.05 | 2 |
| 1.8 | Apply risk assessment. | 6 | 0 | 0 | 0 | 0 | K | 2.09 | 1 |
| 1.9 | Use public health information packages. | 5 | 1 | 0 | 0 | 1 | K | 2.15 | 4 |
| 1.10 | Design a surveillance system. | 6 | 0 | 0 | 0 | 0 | K | 2.07 | 2 |
| 1.11 | Operate a surveillance system. | 6 | 0 | 0 | 0 | 0 | K | 2.18 | 2 |
| 1.12 | Use computer applications. | 4 | 2 | 1 | 0 | 1 | K | 2.24 | 4 |
| 1.13 | Apply ethical conduct. | 3 | 3 | 3 | 0 | 0 | K | 2.12 | 4 |
| 2 | Analytic Skills | | | | | | | | |
| 2.1 | Define a problem. | 1 | 5 | 1 | 1 | 2 | P | 2.42 | 5 |
| 2.2 | Determine appropriate use and limitations of data. | 2 | 4 | 3 | 1 | 0 | K | 2.31 | 4 |

⁴ Number of Faculty

⁵ Number of Faculty

⁶ P = Proficiency; K = Knowledgeable

⁷ The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

⁸ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.58: Analysis of Faculty's Perceptions regarding Teaching of Skills in the Chonburi-II Program vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| No | Public Health Skills by Competency Domain | Analysis of Faculty Perceptions | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|----------|--|---------------------------------|-----|---------------------------------|---------|----|---|----------------------------|---|
| | | Skills Taught ⁴ | | Level being Taught ⁵ | | | Level Required ⁶ | Weighted Mean ⁷ | Attributed to Weak PH Services ⁸ |
| | | No | Yes | Describe | Discuss | Do | | | |
| 2.3 | Select and define variables. | 2 | 4 | 0 | 3 | 1 | K | 2.21 | 4 |
| 2.4 | Use basic research designs and methods. | 2 | 4 | 1 | 1 | 2 | K | 2.20 | 4 |
| 2.5 | Partner with communities. | 3 | 3 | 1 | 1 | 1 | K | 2.16 | 4 |
| 2.6 | Use appropriate data collection. | 2 | 4 | 0 | 2 | 2 | K | 2.06 | 4 |
| 2.7 | Make relevant inferences from data. | 4 | 2 | 0 | 2 | 0 | K | 2.27 | 4 |
| 2.8 | Identify relevant data sources. | 2 | 4 | 2 | 1 | 1 | K | 2.18 | 4 |
| 2.9 | Apply ethical principles. | 6 | 0 | 0 | 0 | 0 | K | 2.12 | 4 |
| 2.10 | Evaluate data. | 4 | 2 | 1 | 1 | 0 | K | 2.23 | 3 |
| 2.11 | Illuminate issues from data. | 4 | 2 | 2 | 0 | 0 | K | 2.05 | 3 |
| 2.12 | Obtain and interpret community risks and benefits. | 6 | 0 | 0 | 0 | 0 | K | 2.17 | 4 |
| 3 | Policy Development Skills | | | | | | | | |
| 3.1 | Collect, summarise and interpret information. | 4 | 2 | 0 | 1 | 1 | K | 2.21 | 3 |
| 3.2 | State policy options. | 5 | 1 | 1 | 0 | 0 | K | 2.04 | 0 |
| 3.3 | Articulate implications of policy options. | 5 | 1 | 1 | 0 | 0 | K | 2.05 | 0 |
| 3.4 | State the expected outcome of policy options. | 5 | 1 | 0 | 1 | 0 | K | 1.98 | 0 |
| 3.5 | Decide on the appropriate course of action. | 3 | 3 | 2 | 1 | 0 | K | 2.19 | 2 |
| 3.6 | Utilise current techniques in analysis and planning. | 5 | 1 | 0 | 1 | 0 | K | 2.32 | 0 |
| 3.7 | Identify policies for specific programs. | 5 | 1 | 1 | 0 | 0 | K | 2.27 | 1 |

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⁵ Number of Faculty

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⁸ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.58: Analysis of Faculty's Perceptions regarding Teaching of Skills in the Chonburi-II Program vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| No | Public Health Skills by Competency Domain | Analysis of Faculty Perceptions | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|----------|--|---------------------------------|-----|---------------------------------|---------|----|---|----------------------------|---|
| | | Skills Taught ⁴ | | Level being Taught ⁵ | | | Level Required ⁶ | Weighted Mean ⁷ | Attributed to Weak PH Services ⁸ |
| | | No | Yes | Describe | Discuss | Do | | | |
| 4 | Social Skills | | | | | | | | |
| 4.1 | Apply appropriate methods for interacting sensitivity, effectively and professionally. | 5 | 1 | 1 | 0 | 0 | K | 2.26 | 5 |
| 4.2 | Identify the role of cultural factors in determining the service delivery. | 4 | 2 | 1 | 1 | 0 | K | 2.04 | 3 |
| 4.3 | Adapt problem solving to fit cultural differences. | 4 | 2 | 1 | 1 | 0 | K | 2.14 | 2 |
| 5 | Strategic Management Skills | | | | | | | | |
| 5.1 | Prepare and implement emergency plans. | 5 | 1 | 1 | 0 | 0 | K | 2.30 | 0 |
| 5.2 | Develop plans. | 4 | 2 | 1 | 1 | 0 | K | 2.32 | 0 |
| 5.3 | Translate policy into organisational plans. | 5 | 1 | 0 | 1 | 0 | P | 2.35 | 0 |
| 5.4 | Monitor and evaluate programs. | 4 | 2 | 0 | 2 | 0 | P | 2.35 | 1 |
| 5.5 | Conduct cost-effectiveness-benefit-utility analyses. | 5 | 1 | 0 | 1 | 0 | K | 2.16 | 1 |
| 5.6 | Apply theory of organisation. | 4 | 2 | 1 | 1 | 0 | K | 2.16 | 0 |
| 5.7 | Contribute to organisational performance standards. | 5 | 1 | 0 | 1 | 0 | K | 2.15 | 1 |
| 5.8 | Promote team learning and organisation learning. | 3 | 3 | 3 | 0 | 0 | K | 2.24 | 1 |
| 5.9 | Create key values and shared vision. | 5 | 1 | 1 | 0 | 0 | K | 2.22 | 1 |
| 5.10 | Identify issues through strategic planning. | 5 | 1 | 0 | 1 | 0 | K | 2.23 | 0 |
| 5.11 | Use appropriate methods that effect change. | 5 | 1 | 1 | 0 | 0 | K | 2.18 | 0 |
| 5.12 | Ensure participation of key stakeholders. | 5 | 1 | 1 | 0 | 0 | K | 2.19 | 1 |
| 5.13 | Create a culture of ethical standards. | 5 | 1 | 1 | 0 | 0 | K | 2.14 | 1 |

⁴ Number of Faculty

⁵ Number of Faculty

⁶ P = Proficiency; K = Knowledgeable

⁷ The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

⁸ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.58: Analysis of Faculty's Perceptions regarding Teaching of Skills in the Chonburi-II Program vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| No | Public Health Skills by Competency Domain | Analysis of Faculty Perceptions | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|----------|--|---------------------------------|-----|---------------------------------|---------|----|---|----------------------------|---|
| | | Skills Taught ⁴ | | Level being Taught ⁵ | | | Level Required ⁶ | Weighted Mean ⁷ | Attributed to Weak PH Services ⁸ |
| | | No | Yes | Describe | Discuss | Do | | | |
| 6 | Communication Skills | | | | | | | | |
| 6.1 | Communicate effectively. | 3 | 3 | 0 | 3 | 0 | P | 2.49 | 1 |
| 6.2 | Solicit input from individuals and organisations. | 4 | 2 | 2 | 0 | 0 | P | 2.41 | 1 |
| 6.3 | Advocate for public health. | 6 | 0 | 0 | 0 | 0 | K | 2.19 | 1 |
| 6.4 | Lead and participate in-groups. | 5 | 1 | 1 | 0 | 0 | K | 2.30 | 1 |
| 6.5 | Use appropriate channels to disseminate information. | 5 | 1 | 0 | 1 | 0 | K | 2.25 | 2 |
| 6.6 | Listen to others in an unbiased manner. | 4 | 2 | 1 | 1 | 0 | P | 2.35 | 2 |
| 6.7 | Make accurate and effective presentations. | 4 | 2 | 1 | 1 | 0 | P | 2.43 | 1 |
| 7 | Partnership Skills | | | | | | | | |
| 7.1 | Maintain linkages with key stakeholders. | 6 | 0 | 0 | 0 | 0 | P | 2.37 | 1 |
| 7.2 | Collaborate with community to promote health. | 5 | 1 | 1 | 0 | 0 | K | 2.23 | 1 |
| 7.3 | Mobilise organisations within the community. | 6 | 0 | 0 | 0 | 0 | K | 2.32 | 1 |
| 7.4 | Use management skills to build partnerships. | 5 | 1 | 1 | 0 | 0 | P | 2.39 | 1 |
| 7.5 | Identify community resources. | 6 | 0 | 0 | 0 | 0 | K | 2.23 | 1 |
| 7.6 | Conduct a community assessment. | 6 | 0 | 0 | 0 | 0 | P | 2.37 | 1 |

⁴ Number of Faculty

⁵ Number of Faculty

⁶ P = Proficiency; K = Knowledgeable

⁷ The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

⁸ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.58: Analysis of Faculty's Perceptions regarding Teaching of Skills in the Chonburi-II Program vs. Perceptions of Need for these Skills, based on the Mailed Questionnaires to those Involved in Public Health (Cont.)

| No | Public Health Skills by Competency Domain | Analysis of Faculty Perceptions | | | | | Analysis of Mastery Required by Mid-level Staff | | |
|----------|---|---------------------------------|-----|---------------------------------|---------|----|---|----------------------------|---|
| | | Skills Taught ⁴ | | Level being Taught ⁵ | | | Level Required ⁶ | Weighted Mean ⁷ | Attributed to Weak PH Services ⁸ |
| | | No | Yes | Describe | Discuss | Do | | | |
| 8 | Operational Management Skills | | | | | | | | |
| 8.1 | Develop and present a budget. | 5 | 1 | 1 | 0 | 0 | P | 2.52 | 1 |
| 8.2 | Manage programs without budget constraints. | 5 | 1 | 1 | 0 | 0 | K | 2.24 | 0 |
| 8.3 | Apply budget processes. | 5 | 1 | 1 | 0 | 0 | K | 2.28 | 0 |
| 8.4 | Determine budget priorities. | 5 | 1 | 1 | 0 | 0 | P | 2.36 | 0 |
| 8.5 | Monitor program performance. | 4 | 2 | 2 | 0 | 0 | P | 2.42 | 1 |
| 8.6 | Develop proposals for funding. | 4 | 2 | 2 | 0 | 0 | P | 2.44 | 2 |
| 8.7 | Apply basic human relation skills. | 4 | 2 | 1 | 1 | 0 | K | 2.32 | 1 |
| 8.8 | Manage information systems for decision-making. | 4 | 2 | 1 | 1 | 0 | P | 2.36 | 2 |
| 8.9 | Apply ethical conduct. | 5 | 1 | 1 | 0 | 0 | P | 2.34 | 1 |

⁴ Number of Faculty

⁵ Number of Faculty

⁶ P = Proficiency; K = Knowledgeable

⁷ The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

⁸ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.59: Specific Skills Not Taught in the Chonburi-II Program and for each the Perceptions of those Involved in the Practice of Public Health

| Competency Domain | No | Specific Skills | Perceptions of those Involved in the Practice of PH | | |
|-------------------------------|------|--|---|-----------------------------|--|
| | | | Level Required ⁹ | Weighted Mean ¹⁰ | Attributed to Weak PH Services ¹¹ |
| 1. Basic Public Health Skills | 1.8 | Apply risk assessment. | K | 2.09 | 1 |
| | 1.10 | Design a surveillance system. | K | 2.07 | 2 |
| | 1.11 | Operate a surveillance system. | K | 2.18 | 2 |
| 2. Analytic Skills | 2.9 | Apply ethical principles. | K | 2.12 | 4 |
| | 2.12 | Obtain and interpret community risks and benefits. | K | 2.17 | 4 |
| 6. Communication Skills | 6.3 | Advocate for public health. | K | 2.19 | 1 |
| 7. Partnership Skills | 7.1 | Maintain linkages with key stakeholders. | P | 2.37 | 1 |
| | 7.3 | Mobilise organisations within the community. | K | 2.32 | 1 |
| | 7.5 | Identify community resources. | K | 2.23 | 1 |
| | 7.6 | Conduct a community assessment. | P | 2.37 | 1 |

Table-5.60: Distribution of Skills Addressed across Teachers

| Public Health Competency Domain | # Faculty Teaching the Same Skill | | | | | | | |
|----------------------------------|-----------------------------------|-------|-------|------|------|------|------|--|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1. Basic Public Health Skills | 3/13 | 2/13 | 3/13 | 4/13 | 0/13 | 1/13 | 0/13 | |
| 2. Analytical Skills | 2/12 | 0/12 | 3/12 | 1/12 | 5/12 | 1/12 | 0/12 | |
| 3. Policy Development Skills | 0/7 | 5/7 | 1/7 | 1/7 | 0/7 | 0/7 | 0/7 | |
| 4. Social Skills | 0/3 | 1/3 | 2/3 | 0/3 | 0/3 | 0/3 | 0/3 | |
| 5. Strategic Management Skills | 0/13 | 9/13 | 3/13 | 1/13 | 0/13 | 0/13 | 0/13 | |
| 6. Communication Skills | 1/7 | 2/7 | 3/7 | 1/7 | 0/7 | 0/7 | 0/7 | |
| 7. Partnership Skills | 4/6 | 2/6 | 0/6 | 0/6 | 0/6 | 0/6 | 0/6 | |
| 8. Operational Management Skills | 0/9 | 5/9 | 4/9 | 0/9 | 0/9 | 0/9 | 0/9 | |
| Total Public Health Skills | 10/70 | 27/70 | 18/70 | 8/70 | 5/70 | 2/70 | 0/70 | |

Table-5.61: A Summary of the Distribution of Actual vs. Required Levels of Mastery for Mid-level Management Staff in All Public Health Skills

| Required Mastery Level | Actual Level of Mastery | | | | |
|------------------------|-------------------------|---------------|-----------|------------|-------|
| | Proficiency | Knowledgeable | Awareness | Not Taught | Total |
| Proficiency | 1/16 | 6/16 | 7/16 | 2/16 | 16/16 |
| Knowledgeable | 11/54 | 18/54 | 17/54 | 8/54 | 54/54 |
| Awareness | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Not a Core Skill | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Total | 12/70 | 24/70 | 24/70 | 10/70 | 70/70 |

⁹ P = Proficiency; K = Knowledgeable

¹⁰ The Weighted Mean for 4 Constituencies (119 Public Health Professionals, 74 Administrators, 25 Academics and 10 MOPH representatives)

Table-5.62: Specific Skills Taught in the Chonburi-II Program at a Lower Level than the Perceptions of those Involved in the Practice of Public Health

| Competency Domain | No | Specific Skills | Perceptions of those Involved in the Practice of PH ¹² | | |
|----------------------------------|------|---|---|-----------------------------|--|
| | | | Level Required ¹³ | Weighted Mean ¹⁴ | Attributed to Weak PH Services ¹⁵ |
| 1. Basic Public Health Skills | 1.1 | Identify responsibilities within public health. | K | 2.26 | 3 |
| | 1.13 | Apply ethical conduct. | K | 2.12 | 4 |
| 2. Analytic Skills | 2.11 | Illuminate issues from data. | K | 2.05 | 3 |
| 3. Policy Development Skills | 3.2 | State policy options. | K | 2.04 | 0 |
| | 3.3 | Articulate implications of policy options. | K | 2.05 | 0 |
| | 3.7 | Identify policies for specific programs. | K | 2.27 | 1 |
| 4. Social Skills | 4.1 | Interact sensitivity, effectively and professionally. | K | 2.26 | 5 |
| 5. Strategic Management Skills | 5.1 | Prepare and implement emergency plans. | K | 2.30 | 0 |
| | 5.3 | Translate policy into organisational. | P | 2.35 | 0 |
| | 5.4 | Monitor and evaluate programs. | P | 2.35 | 1 |
| | 5.8 | Promote team learning and organisation learning. | K | 2.24 | 1 |
| | 5.9 | Create key values and shared vision. | K | 2.22 | 1 |
| | 5.11 | Use appropriate methods that effect change. | K | 2.18 | 0 |
| | 5.12 | Ensure participation of key stakeholders. | K | 2.19 | 1 |
| 6. Communication Skills | 5.13 | Create a culture of ethical standards. | K | 2.14 | 1 |
| | 6.1 | Communicate effectively. | P | 2.49 | 1 |
| | 6.2 | Solicit input from individuals and organisations. | P | 2.41 | 1 |
| | 6.4 | Lead and participate in-groups. | K | 2.30 | 1 |
| | 6.6 | Listen to others in an unbiased manner. | P | 2.35 | 2 |
| 7. Partnership Skills | 6.7 | Make accurate and effective presentations. | P | 2.43 | 1 |
| | 7.2 | Collaborate with community to promote health. | K | 2.23 | 1 |
| | 7.4 | Use management skills to build partnerships. | P | 2.39 | 1 |
| 8. Operational Management Skills | 8.1 | Develop and present a budget. | P | 2.52 | 1 |
| | 8.2 | Manage programs without budget constraints. | K | 2.24 | 0 |
| | 8.3 | Apply budget processes. | K | 2.28 | 0 |
| | 8.4 | Determine budget priorities. | P | 2.36 | 0 |
| | 8.5 | Monitor program performance. | P | 2.42 | 1 |
| | 8.6 | Develop proposals for funding. | P | 2.44 | 2 |
| | 8.8 | Manage information systems for decision-making. | P | 2.36 | 2 |
| | 8.9 | Apply ethical conduct. | P | 2.34 | 1 |

¹¹ Skills Attributed to Public Health Services that have a Perceived Performance Level as a Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

¹² PH = Public Health

¹³ P = Proficiency; K = Knowledgeable

¹⁴ The Weighted Mean for 4 Constituencies

¹⁵ Skills Attributed to Services that are Perceived to Perform as Weakness; 0= none; 1 to 6 = from 1 up to 6 Weak Services

Table-5.63: A Summary of the Distribution of Actual vs. Required Level of Mastery for Mid-level Management Staff for Public Health Skills Attributed to Weak Services

| Required Mastery Level | Actual Level of Mastery | | | | |
|---------------------------|-------------------------|---------------|-----------|------------|-------|
| | Proficiency | Knowledgeable | Awareness | Not Taught | Total |
| Proficiency | 1/13 | 4/13 | 6/13 | 2/13 | 13/13 |
| Knowledgeable | 11/44 | 14/44 | 11/44 | 8/44 | 39/44 |
| Awareness | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Not a Core Skill | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Total | 12/57 | 18/57 | 17/57 | 10/57 | 57/57 |

d. Approach to Instruction

1) Reciprocity

CPH documentation on applied research or development projects, undertaken for the LWP as learning experiences for students, was not existing.

Three main themes came back in most students' discussions (a) their improved ability to think critically and conceptualise, (b) a change in mind-set that direct them to self-learning and (c) unfulfilled expectations in gaining applied research, evaluation and management skills.

Verbatim (isanf4): I gained better conceptual and analytical thinking skills to analyse the problems in my work and find better solutions to problems. I never applied any knowledge from the academic readings before. I just tried to finish the task. But now I realise those academic articles in journals could be applied to my routine work.

Verbatim (ayuf2): What I could get is a self-learning process. I used to believe the student must learn everything the teacher provided. Everything depends on the teacher.

Verbatim (isanf3): I want to know about project evaluation. Unfortunately, what we had learnt is very superficial. It is not sufficient to apply to our work.

Verbatim (ayum1): We do not have a deep understanding in both qualitative and quantitative methods.

Verbatim (ayuf3): I would like to learn more about project evaluation. I am at present trying to find out some Thai textbook on strategic planning.