

Core Competencies in Administration for Meeting Standard Position Requirements in Public Health Professionals

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DOI: <https://doi.org/10.52939/ijg.v20i10.3645>

Abstract

This research aims to analyze the competency components of public health administration among professionals and to propose a framework for defining these competencies using a mixed-methods approach. The study employs an explanatory sequential design with two phases. Phase 1: This phase focuses on identifying the competency components in public health management. Quantitative data were gathered from 2,760 members of the Council of Community-Public Health, who work in community settings. The data collection tool was a Likert scale questionnaire assessing the importance of various public health management competencies. Phase 2: This phase involves validating and defining the competencies through expert review. Experts include members of the Council of Community-Public Health, educators specializing in community public health, and stakeholders in public health operations. The findings indicate that public health administration competencies consist of two main components: 1) Public Health Administration, which includes 13 indicators, and 2) Leadership and Health Finance Administration, which includes 11 indicators. These components align with established standards for public health practitioners. The results can guide professional councils and health organizations in developing strategies to enhance public health administration competencies and can inform the design of curricula for public health administrators at various levels.

Keywords: Administration Competencies, Position Standards, Public Health Practitioner

1. Introduction

Thailand, as a developing country, has made significant strides in area-based public health development and serves as a model for the World Health Organization (WHO) and other nations in several respects. These include advancements in community health, the formulation of public health policies through health assemblies, and the development of Thailand's primary health care components. These elements align with the population's needs and are integrated with the basic health services provided by the government. Subdistrict Health Promoting Hospitals (SHPHs) are the primary drivers of implementation at the local level. This government strategy aims to enhance primary care standards nationwide, as these units are the grassroots service providers closest to the regional population. SHPHs function as frontline service units (gatekeepers) within the health service system, particularly in disease prevention and control, continuous care, and long-term care within

the community. Currently, there are 9,863 SHPHs distributed across all subdistricts. The personnel working in these hospitals are predominantly community public health officers and/or community public health academics, positions not considered specific professions.

In 2013, the Community Public Health Profession Act was enacted to ensure that the public receives services related to community public health. The "Community Public Health Profession" encompasses activities performed on individuals and the environment in the community, related to health promotion, disease prevention, disease control, primary diagnosis and treatment, patient care and assistance, rehabilitation, occupational health, and environmental health. These activities aim to reduce the risk of illness in the community by applying scientific principles. However, this does not include the practice of medical arts or other medical and public health professions as defined by relevant laws.

The role of community public health professionals requires obtaining a degree or diploma equivalent to a degree in public health from a higher education institution in Thailand accredited by the committee [1]. The curriculum emphasizes knowledge, skills, and abilities in health promotion, disease prevention, disease control, primary disease assessment and treatment, patient care, rehabilitation, occupational health, and environmental health, incorporating both theoretical and practical components. However, educational institutions place relatively little emphasis on public health management skills, which are crucial for public health practitioners. This knowledge and these skills are essential for developing public health professionals into effective managers.

Furthermore, the Civil Service Commission has established career paths for public health positions, ranging from operational to expert levels, to align with the Community Public Health Professional Act. The position standards outline the general characteristics of roles within this career path, encompassing tasks related to community public health [2]. These roles include education, planning, evaluation, advising and consulting, analysis, synthesis, and the development of community public health systems. They also involve diagnosing and monitoring community health, researching, and developing innovations for the prevention and control of diseases, health hazards, disasters, and emerging and re-emerging diseases. Additionally, the roles encompass health promotion, occupational health, environmental health, primary disease treatment, illness symptom assessment and management, patient care, and referral for further treatment and rehabilitation. Professionals holding a license in community public health aim to reduce health risks for the public by applying scientific principles through a holistic and participatory community public health process [3]. This approach ensures sustainable community public health operations. Moreover, they perform other related duties. It is evident that the competencies of public health practitioners have been clearly defined by the Community Public Health Professional Council and the Civil Service Commission.

However, the specific competencies required for public health management have not been studied among public health practitioners to determine their necessary components. Therefore, the researcher is interested in studying public health management competencies by comparing them with the established position standards. This study will be beneficial for educational institutions and regulatory agencies, providing guidelines for developing the

competencies of public health practitioners. The objectives of this research are to examine the components of public health administration competencies among public health practitioners and to propose a framework for defining these competencies.

2. Method

This research employs a mixed-methods approach with an explanatory sequential design, conducted in two phases.

2.1 Phase 1: Study of Public Health Management Competencies

The study population comprises 34,359 members of the Community Public Health Council working in the community. The sample size was determined using the method described in [4], resulting in a sample of 1,840 individuals. To capture nationwide opinions, the sample was divided into four regions, with 460 individuals selected from each region. To account for potential data loss, an additional 50% was included, resulting in a total of 920 individuals per region and an overall sample size of 2,760 individuals. Simple random sampling was employed with the following inclusion criteria: (1) being a member of the Community Public Health Professional Council; (2) being 18 years of age or older, literate in Thai, and able to communicate effectively; (3) working in community public health; and (4) being willing to participate in the research. The exclusion criterion was any respondent unable to complete the returned questionnaire. The research instrument was a questionnaire assessing the importance of public health administration competencies, using a 5-point rating scale. The content validity index (CVI) scores ranged from 0.8 to 1.0, and the Cronbach's alpha coefficient ranged from 0.958 to 0.995. Data analysis included percentages, means, standard deviations, and exploratory factor analysis (EFA) using principal component analysis (PCA). The components were rotated orthogonally using the Varimax rotation method. Factors were considered based on an Eigenvalue of ≥ 1.00 and a factor loading of 0.30 or higher, as per the criteria outlined in [4]. Components with the highest factor loadings were selected for inclusion.

2.2 Phase 2: Confirming the Components and Defining Competencies in Public Health Administration

Following Phase 1, the researcher drafted a "Public Health Administration Competency Framework" and proceeded to Phase 2, which involved validating this draft.

This phase focused on verifying the accuracy, appropriateness, and feasibility of the public health management competencies and defining their components. Validation was conducted in two regions: the South and the Northeast, chosen for their potentially distinct cultural contexts. Data were summarized using content analysis and expert critiques. The experts included members of the Community Public Health Professional Council, educators involved in teaching community public health, and stakeholders in the operations of public health practitioners.

2.3 Protection of Participants' Rights in the Research

This research is part of the study and development of professional standards for community public health and was conducted in accordance with ethical principles for research involving humans. These principles include respect for persons, ensuring the autonomy and protection of participants' rights; beneficence and non-maleficence, maximizing benefits while minimizing potential harm; and justice, ensuring fairness in participant selection and the distribution of benefits and burdens. The study was reviewed and approved by the Human Research Ethics Committee, with document number PHCSP-V0.025, from the Sirindhorn College of Public Health, Suphanburi, under the Praboromarajchanok Institute, Ministry of Public Health.

3. Result

3.1 Study of the Components of Public Health

Administration Competencies Among Public Health Practitioners

The exploratory factor analysis (EFA) of public health administration competencies among practitioners revealed a Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of 0.968, indicating that the data are highly suitable for factor analysis, as the KMO value is close to 1. Additionally, Bartlett's Test of Sphericity confirmed that the variables are

significantly correlated (Chi-Square = 106,092.317, $df = 496$, $p\text{-value} < 0.05$) (Table 1). According to Kaiser's method, the preliminary criterion was that the Eigenvalue must be greater than 1, with factor loadings of each variable in a component being 0.5 or higher and each component comprising at least three variables. Factor extraction was performed using principal component analysis, with variable rotation using Kaiser normalization. The analysis revealed that public health administration competencies could be grouped into two components. Three components initially had eigenvalues greater than 1, collectively explaining 79.373% of the variance. Specifically, the first component explained 32.559% of the variance, and the second component explained 32.961% (Table 2). The classification of public health management competencies identified a total of two components. Each component contained variables with factor loadings ranging from 0.897 to 0.549. Component 1, termed "Public Health Management," included 15 indicators. Component 2, termed "Leadership and Health Finance Management," included 9 indicators (Table 3).

3.2 Confirming the Components and Defining the Competencies of Public Health Administration

The researcher presented the variables selected through factor analysis of public health management competencies, which comprised two components, to stakeholders in Songkhla and Khon Kaen provinces. The goal was to confirm and define the indicators within each component. Most stakeholders agreed with the components identified in Phase 1: Component 1, Public Health Management, and Component 2, Leadership and Health Finance Administration. However, they suggested that two indicators from Component 1 be moved to Component 2: understanding the health system (treatment, promotion, prevention, and rehabilitation) and understanding the health service system.

Table 1: Sample adequacy and correlation matrix

Methods	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.968
Bartlett's Test of Sphericity	Approx. Chi-Square df p-value
	106092.317 496 <.0001

Table 2: Statistical values of knowledge standard components

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
1	20.000	62.500	62.500	20.000	62.500	62.500	10.419	32.559	32.559
2.	3.618	11.308	73.808	3.618	11.308	73.808	7.667	32.961	65.520

Table 3: Factor loadings of components (rotated component matrix) and communalities

Factors	Factor load
Component 1: Public Health Management	
1.1 Evaluation of Projects	0.849
1.2 Monitoring and Supervision of Plans, Projects, and Activities	0.840
1.3 Strategic Planning for the Organization	0.796
1.4 Organizing to Support Organizational and Community Goals	0.792
1.5 Principles and Concepts of Public Health Management	0.784
1.6 Situational Analysis Based on Area Context (Strengths, Weaknesses, Opportunities, and Threats for Organizational and Community Development)	0.784
1.7 Health Resource Management	0.784
1.8 Organizational and Community Planning	0.781
1.9 Understanding Health Systems (Treatment, Promotion, Prevention, and Rehabilitation)	0.774
1.10 Understanding Health Service Systems	0.774
1.11 Knowledge Transfer, Skill Development, and Process Implementation to Enhance Health Workforce Capacity	0.670
1.12 Analysis and Planning of Appropriate Health Workforce Allocation Based on Organizational Needs	0.637
1.13 Communication and Coordination	0.601
1.14 Quality Management in Public Health Work	0.590
1.15 Performance Evaluation of Health Personnel in Organizations and Communities	0.587
Component 2: Leadership and Health Finance Administration	
2.1 Financial Risk Management in Health Finance	0.833
2.2 Budget Management of the Organization (Planning, Allocation, Control, Supervision, Adjustment, and Reporting)	0.831
2.3 Financial Management of Health Service Units	0.813
2.4 Asset Management of the Organization	0.763
2.5 Unit Cost Analysis of Health Service Units	0.761
2.6 Leadership	0.607
2.7 Effective Team Management (Control, Supervision, Monitoring)	0.599
2.8 Conflict Management	0.587
2.9 Risk Management in Public Health Work	0.549

The results of expert critiques, including feedback from members of the Community Public Health Professional Council, educators in community public health, and stakeholders in public health operations, provided definitions for terms in the first component, Public Health Management. Public health management involves the administration of health resources such as personnel, finances, materials, and organizational structures to achieve operational effectiveness and efficiency. A plan serves as a guideline for achieving objectives or following policies, while contextual situation analysis prioritizes problems strategically. An agency refers to public and private health service providers as per Section 3 of the Community Public Health Profession Act B.E. 2556 [1]. Leadership entails influencing others to willingly perform tasks to achieve group success. Management involves organizing

individuals to achieve shared organizational goals. Conflict management involves aligning differing ideas or objectives toward a common goal, and risk management aims to minimize undesirable outcomes in health operations. The health system encompasses services that promote, prevent, treat, and rehabilitate health, ensuring quality and safety, while the health service system provides public health services to individuals, families, and communities. The analysis of public health personnel trained in management competencies to meet standard position requirements reveals significant regional variations. In the Central Region, Phra Nakhon Si Ayutthaya, Saraburi, and Lopburi have the highest numbers of trained personnel, underscoring the region's emphasis on effective health system management, including strategic planning, resource allocation, and performance evaluation.

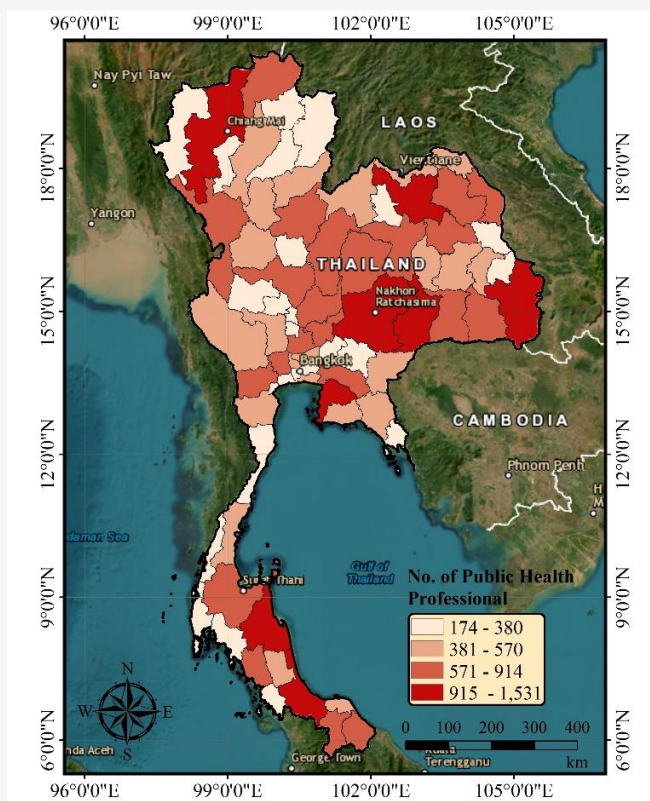


Figure 1: The number of public health professionals (provincial wise)

The Northern Region is led by Chiang Mai, Chiang Rai, and Lampang, with Chiang Mai serving as a major medical and educational hub that enhances health management through advanced training and development programs. In the Northeastern Region, Nakhon Ratchasima, Ubon Ratchathani, and Udon Thani show the highest overall numbers, reflecting a strong demand for management competency development due to the area's significant role as an educational and medical center. The Southern Region, particularly Nakhon Si Thammarat and Songkhla, focuses on comprehensive health service delivery, emphasizing leadership, financial management, and community health promotion. Chonburi in the Eastern Region stands out due to its economic development, which improves health management efficiency through innovative practices and robust health policies. Finally, the Western Region, including Ratchaburi and Tak, demonstrates high-quality management competency development, ensuring standardized health services through effective team management, conflict resolution, and continuous quality improvement. This distribution highlights the concerted regional efforts to develop health systems that meet quality standards and deliver effective health services to all populations (Figure 1).

4. Discussion

The study underscores the critical need for public health practitioners to possess comprehensive knowledge and skills in service delivery, management, and leadership to effectively perform their roles and manage public health organizations. This includes competencies in financial management, risk management, budget administration, unit cost analysis, and asset management, which are fundamental for organizational efficiency and sustainability. Additionally, it highlights the importance of exhibiting leadership qualities, both in guiding administrative functions and professional practices, and mastering technical skills essential for public health operations. Despite these identified needs, the study notes a potential misalignment with the management competencies outlined by the Office of the Civil Service Commission (OCSC), which emphasizes six core competencies: leadership, vision, public-sector strategic planning, the capacity to drive change, self-control, mentoring, and task delegation [5]. This discrepancy suggests a gap between the practical competencies required by public health practitioners and the formal competency framework established by the OCSC, indicating a need for alignment to ensure

comprehensive professional development and effective public health leadership.

Although the identified competencies align with the general competencies for all civil servants, they particularly match the specific job standards for public health practitioners set by the Office of the Civil Service Commission [6]. These job standards outline key responsibilities such as education, planning, evaluation, advising, analysis, synthesis, and the development of public health systems within communities [7]. These tasks are performed using applied scientific principles and a holistic, participatory approach to promote sustainable community health operations. Moreover, the standards emphasize the importance of developing models and guidelines, monitoring, and evaluating the performance of village health volunteers to strengthen the capacity of health networks in health surveillance and promotion within communities. This indicates that while the general civil service competencies provide a broad framework, the specific competencies required for public health practitioners are more detailed and tailored to their unique roles and responsibilities in community health management, emphasizing the practical skills and leadership necessary for effective public health service delivery.

Developing a comprehensive database for operational activities is essential for analyzing performance outcomes and enhancing the efficiency of community public health systems to meet established goals [8]. In the realm of planning, competency involves creating or participating in the planning of departmental or divisional projects, delegating tasks, solving operational problems, and monitoring and evaluating progress to ensure alignment with set objectives and outcomes [9]. Coordination competencies emphasize the ability to work collaboratively within teams, provide guidance, and motivate team members or other units at similar levels to foster cooperation and achieve desired results [10]. This includes articulating ideas and providing feedback in committee or working group meetings to facilitate collaboration and joint efforts. Furthermore, these competencies align with the 21st-century administrative skills identified by the Office of the Civil Service Commission (OCSC) for updating core competencies, which include managing current missions with an awareness of long-term impacts, empowering and developing others, digital proficiency, and foreign language skills [11]. This comprehensive approach ensures that public health practitioners are equipped with the necessary skills to navigate and lead within the evolving landscape of public health administration.

These skills have been crucial in the development of effective systems and mechanisms for managing the COVID-19 crisis, which have led to the successful establishment of COVID-19 surveillance and prevention centers. These centers, operated with active participation from multiple sectors at both the sub-district and community levels, highlight how collaboration between public health volunteers and local administrative organizations has been instrumental in effectively mitigating the spread of the disease [12].

5. Conclusion

The research findings revealed that public health management competencies among practitioners are divided into two components. The first component, Public Health Management, includes 13 indicators: principles and concepts of public health management; organizing to support organizational and community goals; health resource management; monitoring and supervision of plans, projects, and activities; project evaluation; situational analysis based on area context (strengths, weaknesses, opportunities, and threats for organizational and community development); strategic planning for the organization; organizational and community planning; analysis and planning of appropriate health workforce allocation based on organizational needs; knowledge transfer, skill development, and process implementation to enhance health workforce capacity; performance evaluation of health personnel in organizations and communities; communication and coordination; and quality management in public health work.

The second component, Leadership and Health Finance Management, is essential for ensuring the efficient operation and sustainability of public health organizations. It comprises 11 indicators: financial management of health service units; financial risk management in health finance of the organization; budget management (including planning, allocation, control, adjustment, and reporting); unit cost analysis of health service units; asset management of the organization; leadership; effective team management (including control, supervision, and monitoring); conflict management; risk management in public health work; understanding the health system; and understanding the health service system. These indicators collectively emphasize the integration of leadership skills and financial management expertise to enhance the operational efficiency and effectiveness of public health organizations, ensuring that practitioners are well-equipped to manage resources, lead teams, and navigate complex health systems, ultimately contributing to improved public health outcomes.

The number of trained public health personnel underscores the concerted efforts across Thailand to develop health systems that meet quality standards and provide effective health services to all populations. Emphasizing management competencies such as strategic planning, leadership, financial management, and continuous improvement is critical to addressing the diverse and complex health needs of the population. Future efforts should focus on bridging regional disparities and ensuring that all regions have the necessary resources and skills to manage their health systems effectively. This will require ongoing investment in training and development programs, as well as policies that support the sustainable growth and capacity building of public health personnel nationwide.

6. Recommendations

Based on the research findings regarding the management competencies of public health practitioners, it is recommended that professional councils and health organizations employing these practitioners use these insights to develop comprehensive competency enhancement plans. The findings offer a robust framework for designing targeted curricula for public health administrators at various levels, ensuring that training programs align with the identified competencies. Additionally, educational institutions should integrate these competencies into their curricula to ensure that students are well-prepared with the essential skills and knowledge required for effective public health management. By aligning educational outcomes with these competencies, institutions can help cultivate a well-equipped public health workforce capable of addressing contemporary public health challenges and improving overall health outcomes. This alignment also supports the continuous professional development of public health practitioners, enabling them to adapt to evolving healthcare environments and enhance their leadership and management capabilities.

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