

COMPETENCIES OF MEDICAL LABORATORY PERSONNEL: BASIS FOR DEVELOPING A HEALTH TRAINING PROGRAM

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Introduction

- **Competence** is defined as the quality or state of having sufficient knowledge, judgment, skill, or strength as for a particular duty or in a particular respect.
- For a **medical technologist** to be considered “*competent*” they have to possess qualities or demonstrable attributes necessary to the performance of being a medical laboratory scientist, such as:
 - ✓ sufficient medical knowledge
 - ✓ acquire critical thinking
 - ✓ skill in performing clinical laboratory procedures
 - ✓ engage in research and community-related activities that promotes the profession
 - ✓ engage in life-long learning
 - ✓ develop collaborative and leadership qualities
- Even though it is assumed that medical technologists have a strong foundation in medical laboratory health knowledge, skills and literacy, there is an observed competency gap in some areas in health care knowledge, literacy and skills made evident by a study published by the Philippine Medical Technologist Association (**PAMET**) in 2018 by L. Florento et al.

Objectives

- This study seeks to answer the problem of an observed competency gap in some areas in health care knowledge, literacy and skills among medical laboratory personnel.
- To determine what competency area show a need for continuing education and training.
- To develop a proposed health training matrix program.

Methodology

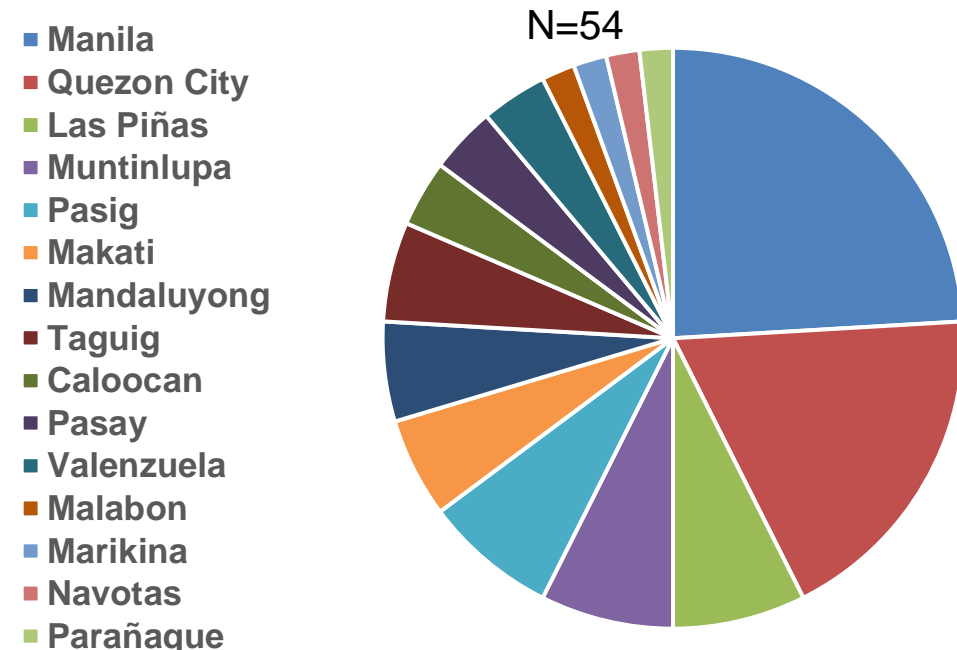
- **Research Design:** Descriptive Research
- **Instrument:** Research-made survey
- **Locale:** National Capital Region
- **Participant/ Respondents:** Registered Medical Technologist
- **Statistical Method:** Frequency distribution, mean level of competencies



Results

- 54 medical laboratory personnel responded from the 15 cities out of 16 cities in National Capital Region (NCR).

Chart 1. Frequency Distribution of Respondents by City

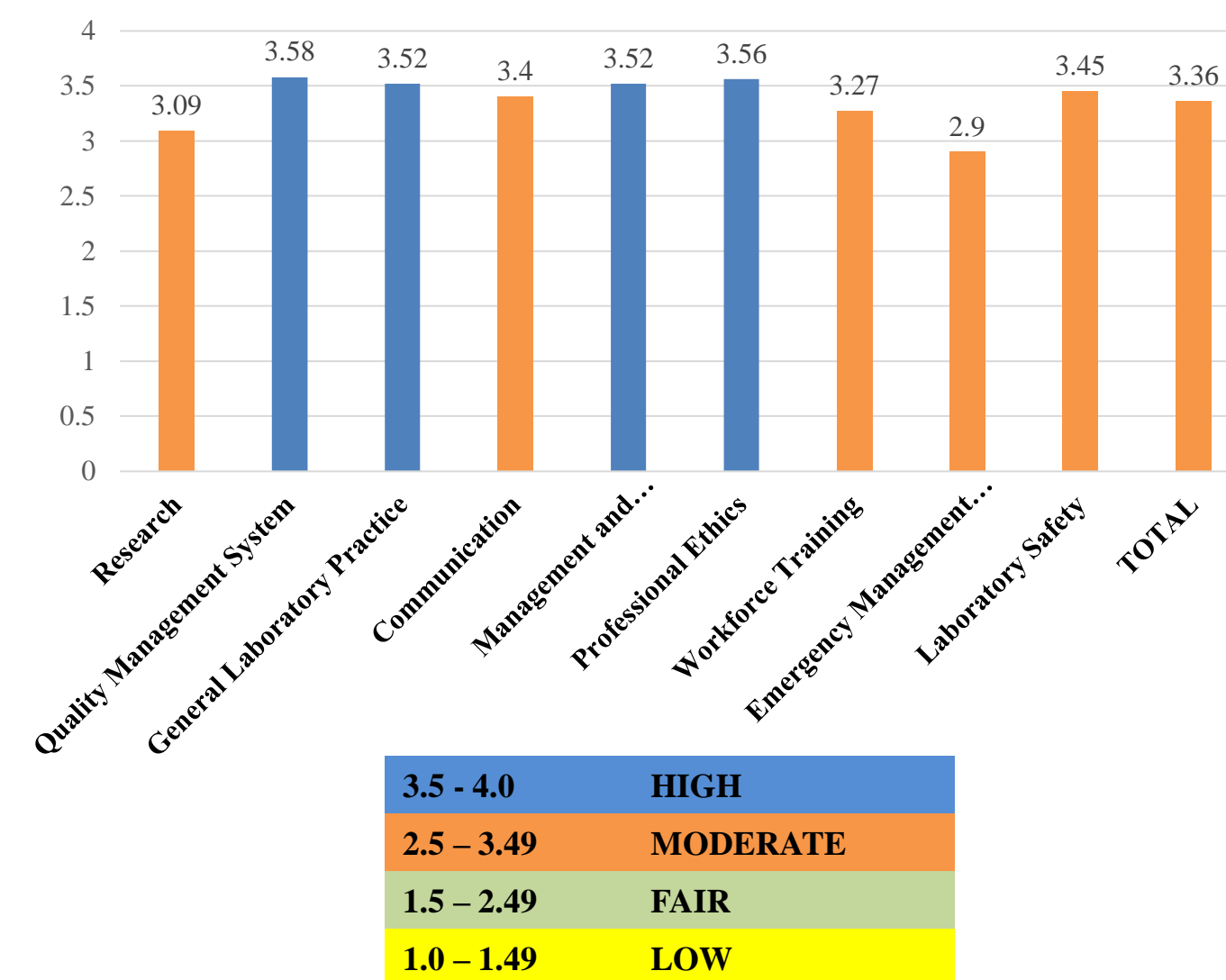


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Table 1. Frequency Distribution of Medical Laboratory Personnel in Terms of Job Title, Gender, Age, Education, and Work Experience. N=54

Medical Laboratory Personnel		
Profile Variable	Frequency (f)	Percent (%)
Job Title		
Licensed Medical Technologist	49	90.8
Chief Medical Technologist	4	7.4
Laboratory Supervisor	3	1.9
Gender		
Male	14	25.9
Female	40	74.1
Age		
25 yrs. old and below	31	57.4
26 - 30	12	22.2
31 - 35	5	9.3
36 - 40	1	1.9
41 - 45	2	3.7
46 and above	3	5.6
Educational Level		
Bachelor's degree	49	90.7
Post-diploma certificate	2	3.8
Master's degree	2	3.7
PhD/ Doctorate	1	1.9
Years of Work Experience		
5 years and Below	41	75.9
6 - 10 years	6	11.1
11 - 15 years	2	3.7
16 - 20 years	2	3.7
21 and above	3	5.6
TOTAL	54	100.0

Chart 2. Summary of Competency Areas, Total Mean and Interpretation



Discussion

As shown in chart 2, the medical laboratory personnel respondents rated themselves in competency areas as follows:

Moderately competent

- 1) **Research** –respondents are moderately competent in research objectives and agendas, statistical concepts, research methodologies, research questions, data collection, and application of research findings to public health practices. Their highest research skills is in research compliance to ethical research practices. However, the lowest competency is in research presentation (poster and oral) to colleagues in the organization at external events.
- 2) **Communication** - the respondents are “moderately competent” in developing communication materials to explain the importance of public health laboratory.
- 3) **Work Force Training** – moderately high in engaging in the continuing professional development activities. While “moderate” in training needs assessment, writing presentation materials, implementing training modalities, applying principles of good practice in community service and social responsibility, discussing trends and developments in medical laboratory science, and participating in professional organizations.
- 4) **Emergency Management and response** - the medical technologist respondents has moderately high skills in determining the proper qualifications for personnel in emergency management. However, there is a training need for developing organizational plan, policy and procedure on how to conduct training on emergency response and drills to a public health emergency.
- 5) **Laboratory Safety** – Moderately high competency in laboratory safety including, labeling and segregating hazardous samples, skills in selecting PPE's (personal protective equipment), laboratory waste disposal and treatment, recognizing laboratory physical hazards, implementing general safety and biosafety program, and compliance to hazardous waste transport procedures.

Highly competent

- 1) **General Laboratory Practices (GLP)** - the respondents are “*highly*” competent in laboratory quality standards in terms of laboratory skills in correct usage, storage, and preparation of reagents and supplies, teaching other lab staff, quality procedures to address customer needs, and waste disposal management.
- 2) **Quality Management System (QMS)** - professional development, managing document, records and data confidentiality, quality control (pre-analytical to post-analytical), and investigating the NCEs (non-conforming events). However, the respondents are “*moderately competent*” in inventory management, workflow processes, ensuring internal and external quality control and ensuring validity of generated laboratory data.
- 3) **Management and Leadership** - The respondents have high mean scores explaining the importance of quality lab testing, ensuring staff compliance with laboratory policies, ability to optimize laboratory program resources, and integrating mechanisms to support cooperation and management conflict and “moderately” in communicating information and feedback to colleagues and management staff.
- 4) **Professional Ethics** - The results shows a “highly competent” score rating in the consistent conformance to ethical standards and practices, and compliance to policies and procedures related to scientific ethics and rules of conduct. However, in ensuring practices that is consistent with guidelines on scientific integrity of all results and findings has the lowest mean score.

The overall competency mean score of the respondents in all nine competency areas is “*moderately competent*”.

Conclusions

In this study, most of the respondents are female staff medical technologist in the entry to mid-entry level career with more or less than 5 years work experience, half of which are working in the private laboratory in the tertiary level. For the perceived competency gap, the following training topics are suggested to become highly competent in the moderate competency areas (refer to table 2).

Table 2. Health Training Program

TRAINING NEEDS	COURSE TRAINING TOPIC
Research	<ul style="list-style-type: none"> ❖ Presentation Skills for Scientists Course ❖ Communicating Science: How to Improve your speaking and Writing Abilities ❖ Research Grant Writing
Communication	<ul style="list-style-type: none"> ❖ How to Improve Clinical and Lab Communication ❖ Health Communication Course Writing Workshop ❖ Professional Development in Health Communication
Work Force Training	<ul style="list-style-type: none"> ❖ Laboratory Personnel Management ❖ How to Conduct Training & Continuing Education Programs ❖ Medical Laboratory Professionals Week Activities
Emergency Management and Response	<ul style="list-style-type: none"> ❖ Policy Writing Workshop on Laboratory Emergency Preparedness and Response ❖ Disaster Risk Management and Safety ❖ Laboratory Incident Management
Laboratory Safety	<ul style="list-style-type: none"> ❖ Engineering Controls for Laboratory Safety ❖ Laboratory Safety Management ❖ Hazard Control: Engineering Controls

However, based on Dreyfus' Model of Skill Acquisition and Stephen Krashen's “comprehensible input”, although the respondents present themselves highly competent in some areas, the researcher suggests a further training to become more proficient and expert on QMS, GLP, Management and Leadership, and Professional Ethics (refer to table 3).

Table 3. Suggested Proficiency Training Program

TRAINING NEEDS	COURSE TRAINING TOPIC
Quality Management System	<ul style="list-style-type: none"> ❖ The Basics of Non-Conforming Event Management for Clinical Laboratory Services ❖ Occurrence Management ❖ Non-Conforming Event Management & Just Culture
General Laboratory Practices	<ul style="list-style-type: none"> ❖ Online Training on Laboratory Regulatory Compliance ❖ DOH Training or Seminar on Licensure and Regulation of Clinical Laboratories ❖ DENR- Basic Training Course for Pollution
Management and Leadership	<ul style="list-style-type: none"> ❖ Training on Personnel Management ❖ Leadership Basics for Clinical Laboratory Professionals ❖ Importance of Laboratory Discipline ❖ Laboratory Personnel Competency Training Assessment
Professional Ethics	<ul style="list-style-type: none"> ❖ Laboratory Data Management and Laboratory Data Privacy ❖ Ethical Laboratory Leadership and Maintain in a Culture of Quality ❖ Ethical Considerations in Clinical Chemistry and Laboratory Medicine

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