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The Status of Medical Technologists in Bicol Region Hospitals: Contributions and Challenges

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Abstract

Aim: This study assessed the current status of medical technologists and their effect on the health care services in private hospitals in the Bicol Region.
Methodology: A developmental type 2 research design was employed to develop insights into the challenges faced by MTs and their effects on healthcare provision. The study included 171 registered MTs from various private hospitals in the Region, employing total enumeration to ensure a comprehensive understanding.
Results: Findings revealed that MTs were predominantly female and in the middle age group, discharged their responsibilities with utmost care, observed ethical values and collaborated with other health personnel. Despite laborious workloads leading to long working hours and stress, they exhibited skill and efficiency in conducting laboratory examinations, ensuring accurate results. Moreover, there was a significant difference along the effectiveness of healthcare delivery as perceived by the clients and medical technologist, however, despite the difference it turned out to be still in consistent with the testing procedures. Lastly, challenges such as limited access to professional development and inadequate remuneration persist, affecting their well-being and job satisfaction
Conclusion: The findings underscore the crucial role of MTs in the healthcare system, highlighting their dedication, professionalism, and commitment to upholding ethical standards and delivering accurate and timely laboratory results. Despite facing numerous challenges, including heavy workloads and limited career advancement opportunities, MTs continue to demonstrate resilience and perseverance in fulfilling their responsibilities.

Keywords: correlation, work environment, job satisfaction, intention to quit

INTRODUCTION

Medical technologists (MTs) are essential healthcare providers who perform diagnostic tests crucial for accurate diagnosis, treatment, and patient management. Their decisions are based on scientific evidence to ensure accuracy and credibility, serving as role models in professionalism and public health advocacy. Whether in hospital labs, clinics, research centers, or universities, MTs play a pivotal role in healthcare delivery, positively impacting patient well-being and public health outcomes. Recognizing and embracing their contributions is essential for universally maintaining and improving healthcare standards.'

The need for significant investment in science and technology human resources is paramount as intense work demands are evident in this line of work, such as those faced in hospital laboratories (Cuenca et al., 2020). The 2022 United States Bureau of Labor Statistics forecasts an 11 percent growth in employment for clinical laboratory technologists and technicians from 2020 to 2030, surpassing the average growth rate for all professions. This trend translates to an anticipated 25,900 annual job openings in this field, highlighting a pressing global demand for skilled S&T professionals in healthcare and underscoring the critical need for countries like the Philippines to bolster their S&T human resources infrastructure to meet future challenges.

The pressing challenge of the decade lies in the recruitment and retention of MTs, as evidenced by the widening gap between the demand and supply of laboratory professionals. Workforce shortages, influenced by factors like aging and technological advancements, pose challenges to maintaining high-quality patient care and meeting

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service demands. Despite their vital contributions, MTs often lack recognition compared to other medical professionals, emphasizing the need for interventions to address shortages and uphold healthcare service quality.

A critical shortage of MTs is recorded in the Philippines, noting a ratio of one (1) MT for every 36,000 people as of 2022. The Bicol region struggles with a lack of these professionals in both secondary and tertiary-level clinical laboratories. A study investigating the impact of hospital management practices on workload distribution, assigned areas per shift, and hours worked revealed that MTs face heavy workloads and long hours, often without additional pay, and work beyond their regular shifts to promptly fulfill doctors' diagnostic requests and meet patient needs. These challenges highlight the urgent need for systemic changes to address the scarcity of MTs and improve their working conditions, ensuring both healthcare professionals and patients receive the support they deserve.

This study delved into the landscape of MTs within private hospitals of the Bicol Region. By analyzing their demographics, employment conditions, and contributions to healthcare services, the research aimed to shed light on potential areas for improvement and advancement within the workforce

Objectives

This study assessed the current status of medical technologists and their effect on the health care services in private hospitals in the Bicol Region.

Specifically, this study answered the following objectives:

1. Determine the profile of the Medical Technologists in private hospitals within the Bicol Region in terms of the following demographic characteristics:
    1.1. Age;
    1.2. Sex;
    1.3. Employment Status (e.g., permanent, COS, etc.);
    1.4. Length of Service (Tenure);
    1.5. Educational Advancement;
    1.6. Professional Advancement; and
    1.7. Salary.
2. Evaluate the current status of medical technologists in Bicol Region along;
    2.1. Workload distribution;
    2.2. Specific assigned area per shift; and
    2.3. Number of hours rendered.
3. Determine the awareness on the effectiveness of Medical Technologists in health care delivery services along;
    3.1. Pre analytical;
    3.2. Analytical; and
    3.3. Post analytical.
4. Analyze significant differences in the status of medical technologists and the effectiveness of health care delivery;
5. Identify the problems encountered by medical technologists in the private hospital, as perceived by:
    5.1. Patients; and
    5.2. Medical Technologists.
6. Propose a policy framework to address the challenges encountered by Registered Medical Technologists in the health care delivery.

Hypothesis

In the stated objectives of the study, one hypothesis was tested on 0.05 level of significance:
Hypothesis 1: There is no significant difference in the perceived health care service delivery between clients and RMTs employed in private hospitals within the Bicol Region

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METHODS

Research Design

The study employed a descriptive, quantitative approach utilizing a survey design to understand the present condition of MTs within private hospitals across the Bicol Region. This method systematically evaluated staffing levels, workload distribution, training opportunities, and job satisfaction among MTs.

Population and Sampling

Respondents were composed of Registered Medical Technologists (RMTs) and their clients. For the RMTs population, all 171 RMTs employed in private hospitals throughout the Bicol Region were taken as respondents to ensure a comprehensive understanding of their status in terms of healthcare delivery. Random sampling was utilized to select clients as respondents, with individuals chosen from each province within the region. Specifically, clients who were present at the facility awaiting services were approached to complete the questionnaires. Additionally, prospective respondents were included who could accommodate the survey through online response via a digital form.

Instrument

The research instrument employed in this study consisted of a validated researcher-made questionnaire and checklist, both developed based on insights drawn from existing literature. To ensure the alignment of content, the instrument underwent validation through feedback obtained from ten (10) Registered Medical Technologists who were not involved as respondents in the study. Additionally, the reliability of the instrument was established with inputs from other healthcare professionals.

Data Collection

The survey gathered their age, gender, employment status, length of service, educational attainment, professional specialization, and salary range in accordance with the objectives of the study. Data collection were done primarily through personal administration of questionnaires or electronic copies via online platforms to facilitate the inclusion of participants who may have been geographically dispersed or had limited access to the hospital premises. Clients awaiting results and tests at the hospital were randomly approached to participate in the study. Throughout the distribution, extraction, and analysis of data, strict adherence to ethical protocols was observed to safeguard the integrity and validity of the research outcomes.

Treatment of Data

To effectively address each objective of the study, a range of tools and measures were employed for thorough data analysis. Firstly, to gain insights into the demographic profile of the respondents, frequency count and percentage calculations were utilized. Subsequently, to assess the effects of healthcare service on the status of medical technologists in the Bicol Region, a combination of weighted mean and frequency count analyses was employed. Similarly, to evaluate the effectiveness of healthcare delivery across three dimensions—pre-analytical, analytical, and post-analytical—a parallel approach of weighted mean and frequency count analyses was employed. In assessing the challenges encountered by respondents in healthcare service delivery, frequency count and ranking methodologies were employed. To test for statistical difference between the MTs and clients' answers, independent t-Test was used. By employing this comprehensive approach to data analysis, the research team was able to systematically examine the research findings, derive meaningful insights, and draw informed conclusions regarding the current status and challenges faced by medical technologists in private hospitals within the Bicol Region

Ethical Considerations

The study adhered to the prescribed guidelines of the Philippine National Ethics Commission, ensuring that fair, just, and humane procedures were followed throughout the data collection process involving human respondents or participants. This commitment to ethical standards underscored the researcher's dedication to upholding the rights and well-being of the participants and maintaining the credibility and trustworthiness of the research outcomes.

RESULTS and DISCUSSION

This section of the study delves into the comprehensive analysis of the status of medical technologists working within private hospitals across the Bicol Region, with a primary focus on their roles and contributions to healthcare

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services. Through rigorous data collection and analysis, the research aimed to provide valuable insights into the current landscape of medical technologists in the region, shedding light on various aspects such as their demographic profile, employment conditions, challenges encountered, and effectiveness in healthcare delivery.

1. Profile of the Registered Medical Technologists

The presented table 1.1 offers a comprehensive breakdown of various demographic and professional characteristics of medical technologists working within private hospitals across the Bicol Region. These characteristics include age distribution, gender representation, employment status, length of service, educational advancement, professional specialization, and salary ranges. Analyzing these results provides valuable insights into the profile of medical technologists in the region, shedding light on their diversity and the factors that may influence their roles and experiences within the healthcare system.

Table 1. Profile of the Registered Medical Technologist Employed in Private Hospitals within Bicol Region (N=171)

Indicators		f	%
1.1 Age	51 and above	24	14.04
	41 – 50	67	39.18
	31 – 40	42	24.56
	21 – 30	38	22.22
1.2 Sex	Male	76	44.44
	Female	95	55.56
1.3 Employment Status	Permanent	78	45.61
	Non-permanent	93	54.39
1.4 Length of Service (Year/s)	31 and above	32	18.71
	21 – 30	47	27.49
	11 – 20	35	20.47
	1 – 10	57	33.33
1.5 Educational Advancement	Doctorate Degree	1	0.58
	Doctorate level(earning units)	5	2.92
	Master's degree	18	10.53
	Master level (earning units)	32	18.71
1.6 Professional Advancement	Microbiology RMT	15	8.77
	Blood Bank Supervisor RMT	10	5.85
	HIV Proficient RMT	2	1.17
1.7 Salary	PHP 41,000 and above	5	2.92
	PHP 36,000 – 40,999	19	11.11
	PHP 31,000 – 35,999	23	13.45
	PHP 26,000 – 30,999	32	18.71
	PHP 21,000 – 25,999	38	22.22
	PHP 16,000 – 20,999	54	31.58

1.1 Age

The data reveals a diverse age distribution among MTs, with the majority falling within the 41-50 age range (39.18%), followed by those aged 31-40 (24.56%). The age distribution demonstrates a relatively balanced representation across different age groups, indicating a diverse workforce composition (Lenicek Krleza et al., 2019). However, the concentration of individuals within the 41-50 age range suggests a significant portion of experienced professionals within the field.

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1.2 Sex

Gender distribution shows a relatively balanced representation, with more female MTs (55.56%) employed. The predominance of female representation reflects the gender diversity within the profession, mirroring broader trends observed in healthcare occupations.

1.3 Employment Status

Most MTs are classified as non-permanent employees (54.39%), while 45.61% hold permanent positions within private hospitals. A concerning finding of the predominance of MTs in non-permanent positions indicates potential job security and stability challenges within private hospital settings. This finding underscores the need for policies and initiatives to enhance MTs employment opportunities and career progression (Ahmed, 2020).

1.4 Length of Service

Analysis of length of service reveals a varied distribution, with significant percentages of medical technologists having served for 1-10 years (33.33%) and 21-30 years (27.49%). The varied distribution of length of service underscores the importance of recognizing and accommodating the diverse needs and experiences of MTs at different stages of their careers.

1.5 Educational Attainment

Regarding educational advancement, the data indicates diverse levels of educational attainment among MTs, with the highest proportion holding Master level (earning units) qualifications (18.71%). Additionally, significant percentages hold Master's degrees (10.53%) and Doctorate level (earning units) qualifications (2.92%). The diverse educational and professional advancements observed among MTs highlight the ongoing commitment to professional development and specialization within the field (David et al., 2020; Amihan & Sanchez, 2023; Sanchez, 2022).

1.6 Professional Advancement

Regarding professional specialization, a notable percentage of MTs have specialized in Microbiology RMT (8.77%), followed by Blood Bank Supervisor RMT (5.85%) and HIV Proficient RMT (1.17%). The diverse educational and professional advancements observed among MTs highlight the ongoing commitment to professional development and specialization within the field (David et al., 2020).

1.7 Salary

Analysis of salary ranges indicates that most MTs earn salaries in the 16,000 - 20,999 PHP range (31.58%), followed by the 21,000 - 25,999 PHP range (22.22%) and the 26,000 - 30,999 PHP range (18.71%). Smaller percentages are observed in higher salary brackets, with only 2.92% earning 41,000 PHP and above. Disparities in salary ranges suggest potential issues related to compensation and remuneration, warranting further examination and potential interventions to ensure equitable compensation practices within private hospital settings.

1.8 Test for Significant Difference Between Standard Number of RMTs and the Actual Number of RMTs in Various Levels of Laboratory in Bicol Region

Table 1.2 presents the results of a test for significant difference between the standard number of RMTs and the actual number of RMTs in various levels of laboratories across the Bicol Region. The standard number of RMTs, as indicated in "Standard Number of RMTs", has a mean of 10.48 with a standard deviation of 4.05. The p-value associated with this group is reported as 0.00, indicating statistical significance. This finding suggests a significant difference between the standard number of RMTs recommended for laboratory settings and the actual number employed in practice. In contrast, the actual number of RMTs, represented in "Actual Number of RMTs", has a mean of 6.84 and a standard deviation of 2.66. While no p-value is provided for this group, it is evident from the absence of a value that statistical significance may not have been assessed for the actual number of RMTs. However, the lower mean compared to the standard number suggests a potential discrepancy between the recommended staffing levels and the actual workforce composition in laboratory settings across the Bicol Region.

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Table 1.2 Test for Significant Difference Between Standard Number of RMTs and the Actual Number of RMTs in Various Levels of Laboratory in Bicol Region

Group	N	Mean	SD	P-value*	Interpretation	Decision
Standard Number of RMTs	25	10.48	4.05	0.00	Significant	Reject
Actual Number of RMTs	25	6.84	2.66			

*alpha @ 0.05

The analysis of Table 4.1 reveals a significant difference between the standard number of RMTs recommended for laboratory settings and the actual number of RMTs employed in practice. The implications of these findings are significant for laboratory management, healthcare administrators, and policymakers within the Bicol Region. The significant difference between the standard and actual number of RMTs suggests potential challenges in meeting staffing requirements and ensuring adequate human resources for laboratory services (David et al., 2020). This discrepancy may impact the quality, efficiency, and safety of laboratory testing and diagnostic services, ultimately affecting patient care outcomes and healthcare delivery.

2. Effects on Healthcare Services

2.1 Workload Distribution

Analysis of Table 2.1 reveals a consistent agreement pattern among MTs, expressing concerns regarding workload distribution challenges within their respective healthcare settings. These findings underscore potential systemic issues that may impact staff well-being, patient care quality, and overall operational efficiency within healthcare facilities in the region (Matemani, 2019). Addressing workload distribution concerns is crucial for healthcare administrators and policymakers in the Bicol Region to ensure optimal workforce management and service delivery (Fitzgerald, 2022). By recognizing and addressing these challenges, healthcare organizations can create a supportive work environment, enhance staff satisfaction and performance, and ultimately improve the quality and efficiency of healthcare services for the benefit of both healthcare providers and patients (Sanchez, et al., 2024).

Table 2.1 The Effects on the Health Care Services of Current State of Medical Technologist in Bicol Region along Workload Distribution

Indicators	Weighted Mean	Adjectival Interpretation
1. My workload is higher than the ideal workload for my position	3.85	Agree
2. My workload is higher than that of my colleagues in the same hospital/organizational status.	3.78	Agree
3. My workload is higher than that of colleagues in higher income levels on the hospital/organization	3.92	Agree
4. The number of staff in medical technology field is not distributed accordingly to workload and number of patients	3.89	Agree
Overall Weighted Mean	**3.86**	**Agree**

Legend: *Strongly Agree (SA) (4.50 – 5.00), Agree (A) (3.50 – 4.49), Neutral (N) (2.50 – 3.49), Disagree (D) (1.50 – 2.49), Strongly Disagree (SD) (1.00 – 1.49)*

2.2 Specific Assigned Area per Shift

The study highlighted the importance of task specialization and its impact on workload (Table 2.2). The respondents acknowledged the influence of their specific areas of expertise on their workload and the critical nature of

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their specialized tasks. However, concerns were raised regarding staffing shortages and the lack of readily available personnel to cover specialized tasks during shift changes. The results underscore the critical need for addressing challenges related to specific assigned areas per shift among MTs in the Bicol Region (Hailu et al., 2020). By recognizing and mitigating these challenges, healthcare organizations can optimize workforce allocation, enhance staff satisfaction and performance, and ultimately improve the quality and efficiency of healthcare service delivery.

Table 2.2 The Effects on the Health Care Services of Current State of Medical Technologist in Bicol Region along Specific Assigned Area per Shift

Indicators	Weighted Mean	Adjectival Interpretation
1. My workload is occasioned by my unique area of specialization	3.90	Agree
2. There are no other medical technologists that can perform my specific task which has a high effect on shifting	4.24	Strongly Agree
3. The hospital/organization does not have adequate workers affecting specific assignments per shift	3.52	Agree
4. There is inadequate number of staff to fill in work schedule per shift	3.65	Agree
Overall Weighted Mean	**3.83**	**Agree**

Legend: *Strongly Agree (SA) (4.50 – 5.00), Agree (A) (3.50 – 4.49), Neutral (N) (2.50 – 3.49), Disagree (D) (1.50 – 2.49), Strongly Disagree (SD) (1.00 – 1.49)*

2.3 Number of Hours Rendered

Table 2.3 The Effects on the Health Care Services of Current State of Medical Technologist in Bicol Region along Number of Hours Rendered

Indicators	Weighted Mean	Adjectival Interpretation
1. The hospital/organization have adequate workers, but the medical technologists are requested to render more than the required number of hours	3.78	Agree
2. Additional hours rendered are paid with overtime	3.94	Agree
3. The number of hours in a shifting work schedule is higher than the ideal hours of work for a medical technologist	4.02	Agree
4. The long number of hours rendered is not sufficient given the heavy workload and increasing number of patients	3.98	Agree
Overall Weighted Mean	**3.93**	**Agree**

Legend: *Strongly Agree (SA) (4.50 – 5.00), Agree (A) (3.50 – 4.49), Neutral (N) (2.50 – 3.49), Disagree (D) (1.50 – 2.49), Strongly Disagree (SD) (1.00 – 1.49)*

Data presented in Table 2.3 shows that despite adequate staff (as perceived by some respondents), the study identified extended work hours as a significant challenge. While additional hours were compensated with overtime pay, concerns remained regarding fatigue, burnout, and the potential impact on quality of care due to long working hours. The findings emphasized the importance of addressing challenges related to extended work hours among MTs in the Bicol Region. By recognizing and mitigating these challenges, healthcare organizations can promote staff well-being,

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enhance workforce productivity, and ultimately improve the quality and efficiency of healthcare service delivery. It also highlights the need for proactive measures to address workforce management issues and promote a healthy work-life balance among MTs in the Bicol Region. By addressing these challenges, healthcare organizations can create a conducive work environment that supports staff well-being and enhances the overall quality of healthcare service delivery for the benefit of both healthcare providers and patients in the region.

3. Effectiveness of Medical Technologists

The study acknowledged the vital role of MTs in healthcare delivery, particularly during the COVID-19 pandemic. Their expertise in diagnostic testing contributes significantly to patient safety and effective treatment plans. This study assessed this expertise in pre-analytical, analytical, and post-analytical aspects.

3.1 Pre-analytical

In the pre-analytical services (Table 3.1), Notably, both MTs and clients provide exceptionally high scores across all indicators, with weighted mean scores ranging from 4.90 to 5.00 and a p-value 0.05 indicating no significant difference. These scores are accompanied by adjectival interpretations of "EE" (Extremely Effective), indicating a consensus among respondents regarding the exceptional performance of MTs in pre-analytical processes. The exceptional performance of MTs in the pre-analytical phase has significant implications for healthcare delivery. Their ability to accurately observe testing orders, utilize information technology for streamlined processes, minimize pre-analytical errors, and maintain specimen integrity is essential for ensuring the reliability and validity of laboratory test results.

Table 3.1 Effectiveness of Medical Technologist in the Delivery of Health Care Services along pre-analytical

Indicators	MedTech		Client	
	WM	**AD**	**WM**	**AD**
1. The medical technologist observes the testing order from doctors.	5.00	EE	5.00	EE
2. The medical technologist uses information technology or pre-analytical automation in the hospital simplify the laboratory or testing process.	4.98	EE	4.92	EE
3. The medical technologists precisely use clinical and laboratory data or information on patients to reduced pre-analytical errors.	4.95	EE	4.90	EE
4. The medical technologist labels or identifies patient specimen accordingly.	5.00	EE	4.92	EE
5. The medical technologist appreciates specimen collection integrity which depends on the number of processes performed.	5.00	EE	4.95	EE
Overall Weighted Mean	**4.99**	**EE**	**4.93**	**EE**

Legend: *Extremely Effective (EE) (4.50 – 5.00), Highly Effective (HE) (3.50 – 4.49), Moderately Effective (ME) (2.50 – 3.49), Slightly Effective (SE) (1.50 – 2.49), Not Effective (NE) (1.00 – 1.49)*

3.2 Analytical

Along with analytical services (Table 3.2), MTs and clients attribute high scores across all indicators, with weighted mean scores ranging from 4.67 to 5.00 and a p-value of 0.04, indicating a significant difference. These scores are accompanied by adjectival interpretations of "EE" (Extremely Effective), indicating a consensus among respondents regarding the exceptional performance of MTs in analytical processes. The consistently high scores and adjectival interpretations across all indicators suggest a strong level of confidence and satisfaction among MTs and clients

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regarding the effectiveness of MTs in the analytical phase. The scores reflect the proficiency, professionalism, and commitment of MTs in delivering accurate and reliable laboratory results within a timely manner (O'Connor, 2023). Additionally, their adherence to safety protocols and patient-centric approach further enhances their effectiveness in addressing healthcare needs.

Table 3.2 Effectiveness of Medical Technologist in the Delivery of Health Care Services along Analytical

Indicators	Med Tech		Clients	
	WM	**AD**	**WM**	**AD**
1. The medical technologist gives the appropriate results to health care professionals like doctors within a time frame	4.94	EE	4.80	EE
2. The medical technologist observes the culture of safety in the laboratory such us washing of hands and wearing protective gears	5.00	EE	4.82	EE
3. The medical technologist approaches every medical issue through the perspectives of the patients.	4.75	EE	4.72	EE
4. The medical technologist acknowledges errors and initiate ways to avoid more.	4.82	EE	4.67	EE
5. Medical technologist identifies hazards and initializes examination of ways to prevent future adverse events.	4.90	EE	4.78	EE
Overall Weighted Mean	**4.88**	**EE**	**4.76**	**EE**

Legend: *Extremely Effective (EE) (4.50 – 5.00), Highly Effective (HE) (3.50 – 4.49), Moderately Effective (ME) (2.50 – 3.49), Slightly Effective (SE) (1.50 – 2.49), Not Effective (NE) (1.00 – 1.49)*

3.3 Post-analytical

The post-analytical phase is the final phase of the laboratory process. Along this phase, MTs and clients attribute high scores (Table 3.3), with weighted mean scores ranging from 4.46 to 5.00 and a p-value of 0.70 indicating no significant difference. These scores are accompanied by adjectival interpretations of "EE" (Extremely Effective), indicating a consensus among respondents regarding the exceptional performance of MTs in post-analytical processes. The consistently high scores and adjectival interpretations across all indicators suggest a strong level of confidence and satisfaction among both MTs and clients regarding the effectiveness of MTs in the post-analytical phase. The scores reflect MTs' professionalism, reliability, and patient-centered approach in transmitting test results with integrity, timeliness, and confidentiality (Aytona et al., 2022). Moreover, their collaboration with other medical team members and patient feedback encouragement further enhance their effectiveness in providing optimal patient care.

Table 3.3 Effectiveness of Medical Technologist in the Delivery of Health Care Services along Post-Analytical

Indicators	Med Tech		Clients	
	WM	**AD**	**WM**	**AD**
1. The medical technologist transmits test results with integrity and confidentiality.	5.00	EE	4.89	EE
2. The medical technologist submits the tests results on time to the health care professionals and patients.	4.82	EE	4.80	EE
3. The medical technologist is guided by the notification system to reduce waiting time or hospital stays of patients.	4.75	EE	4.73	EE
4. The medical technologists and other medical team members work together to provide optimal patient care like proper results communication.	4.92	EE	4.90	EE

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5. The medical technologists encourage patients to give feedback with the level of laboratory services.	4.50	EE	4.46	EE
Overall Weighted Mean	**4.80**	**EE**	**4.76**	**EE**

Legend: *Extremely Effective (EE) (4.50 – 5.00), Highly Effective (HE) (3.50 – 4.49), Moderately Effective (ME) (2.50 – 3.49), Slightly Effective (SE) (1.50 – 2.49), Not Effective (NE) (1.00 – 1.49)*

4. Test of Significance on the Difference on the Effectiveness of Medical Technologist in the Delivery of Health Care Services Among the Groups of Respondents

4.1 Preanalytical

Table 4.1 presents the results of the test of significant difference between Registered Medical Technologists (RMTs) and clients in the effectiveness of healthcare services in the pre-analytical phase. This analysis aims to determine if there is a statistically significant difference in perceptions between RMTs and clients regarding the effectiveness of healthcare services during the pre-analytical phase.

Table 4.1. Test of Significant Difference between RMT and Client in the Effectiveness of Health Care Services in the Pre-analytical

Group	N	Mean	p-value*	Interpretation	Decision
RMT	5	4.98	0.05	Not Significant	Rejected
Client	5	4.93			

**Significance @ 2-tailed; alpha @ 0.05.*

The table displays the p-value, which serves as a measure of statistical significance. A p-value less than the alpha level (0.05) indicates statistical significance, suggesting that there is a significant difference between the perceptions of RMTs and clients regarding the effectiveness of healthcare services in the pre-analytical phase.

The absence of specific values or interpretations in Table 4.1 makes it challenging to provide detailed analysis of the results. However, typically, if the p-value is less than 0.05, it implies that there is a statistically significant difference between the two groups being compared. In this case, it would suggest that there is a significant disparity in the perceptions of RMTs and clients regarding the effectiveness of healthcare services in the pre-analytical phase (Yeste et al., 2021).

The results of the test of significant difference have implications for understanding the perspectives of RMTs and clients in the pre-analytical phase of healthcare services. Identifying any significant differences can shed light on potential areas of improvement or discrepancies in perception between healthcare providers and recipients (Kalra et al., 2023). Addressing these differences can help enhance communication, collaboration, and overall healthcare quality.

While Table 4.1 provides insight into the presence of a significant difference between RMTs and clients in their perceptions of healthcare services during the pre-analytical phase, further analysis and interpretation are necessary to understand the nature and implications of this difference. Future research could delve deeper into the factors contributing to these discrepancies and explore strategies to bridge the gap in perceptions between healthcare providers and clients, ultimately improving healthcare delivery and patient satisfaction.

4.2 Analytical

Table 4.2 presents the results of the test of significant difference between Registered Medical Technologists (RMTs) and clients in the effectiveness of healthcare services in the analytical phase. This analysis aims to determine if there is a statistically significant difference in perceptions between RMTs and clients regarding the effectiveness of healthcare services during the analytical phase.

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Table 4.2 Test of Significant Difference between RMT and Client in the Effectiveness of Health Care Services in the Analytical

Group	N	Mean	p-value*	Interpretation	Decision
RMT	5	4.88	0.04	Significant	Accepted
Client	5	4.76			

**Significance @ 2-tailed; alpha @ 0.05.*

The table displays the p-value, which serves as a measure of statistical significance. In this case, the p-value is 0.04, which is less than the alpha level of 0.05. This indicates statistical significance and suggests that there is a significant difference between the perceptions of RMTs and clients regarding the effectiveness of healthcare services in the analytical phase (Sheringham & Sowden, 2023).

The p-value of 0.04 indicates that there is a statistically significant difference in perceptions between RMTs and clients regarding the effectiveness of healthcare services in the analytical phase. This finding suggests that there may be disparities or discrepancies in how RMTs and clients perceive the quality and efficacy of healthcare services during this phase of the healthcare process (Kumar et al., 2019).

The results of the test of significant difference highlight the importance of understanding and addressing potential discrepancies in perceptions between healthcare providers and recipients. Identifying and addressing these differences can lead to improved communication, collaboration, and ultimately, better healthcare outcomes (Ding, 2022). It also underscores the significance of ensuring that healthcare providers and clients are aligned in their understanding and expectations of healthcare services.

While Table 4.2 provides insight into the presence of a significant difference between RMTs and clients in their perceptions of healthcare services during the analytical phase, further research and analysis are needed to understand the underlying factors contributing to this difference. Future studies could explore the specific aspects of the analytical phase that contribute to these discrepancies and examine strategies to bridge the gap in perceptions between healthcare providers and clients, ultimately enhancing healthcare delivery and patient satisfaction.

4.3 Post-Analytical

Table 4.3 presents the results of the test of significant difference between Registered Medical Technologists (RMTs) and clients in the effectiveness of healthcare services in the post-analytical phase. This analysis aims to determine if there is a statistically significant difference in perceptions between RMTs and clients regarding the effectiveness of healthcare services during the post-analytical phase.

Table 4.3 Test of Significant Difference between RMT and Client in the Effectiveness of Health Care Services in the Post analytical

Group	N	Mean	p-value*	Interpretation	Decision
RMT	5	4.80	0.70	Not Significant	Rejected
Client	5	4.83			

**Significance @ 2-tailed; alpha @ 0.05.*

The table displays the p-value, which serves as a measure of statistical significance. In this case, the p-value is 0.70, which exceeds the alpha level of 0.05. This indicates that there is no statistically significant difference between the perceptions of RMTs and clients regarding the effectiveness of healthcare services in the post-analytical phase.

The p-value of 0.70 suggests that there is no statistically significant difference in perceptions between RMTs and clients regarding the effectiveness of healthcare services in the post-analytical phase. This finding implies that both groups perceive the quality and efficacy of healthcare services during this phase similarly, with no significant variations between them (Barber, 2019).

The results of the test of significant difference indicate that there is a high level of agreement between RMTs and clients regarding the effectiveness of healthcare services in the post-analytical phase. This alignment in perceptions suggests that both groups have similar expectations and evaluations of the quality of healthcare services during this phase of the healthcare process. It implies that the post-analytical phase may be functioning effectively in meeting the needs and expectations of both healthcare providers and recipients (Rahman et al., 2023).

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While Table 4.3 highlights the absence of a significant difference between RMTs and clients in their perceptions of healthcare services during the post-analytical phase, further research could explore the specific factors contributing to this alignment in perceptions. Understanding the reasons behind this agreement could provide insights into areas of strength in the post-analytical phase and identify opportunities for improvement in other phases of healthcare delivery (Nasabi et al., 2019). Additionally, ongoing monitoring and evaluation of healthcare services in the post-analytical phase are essential to ensure continued alignment between healthcare providers and clients and to maintain high standards of care.

5. Challenges Encountered by the Medical Technologist (RMTs) employed in Private Hospitals within the Bicol Region

Table 5 outlines 12 challenges MTs face, along with their corresponding frequencies and ranks. Insights revealed the prevalence and prominence of certain challenges, notably those concerning prolonged working hours without commensurate compensation, overwhelming workloads, and the struggle to maintain a healthy work-life balance, underscore the gravity of the concerns harbored by RMTs regarding their employment conditions and financial remuneration (Pratiwi et al., 2021).

Table 5 Challenges Encountered Registered Medical Technologist Employed in Private Hospitals within Bicol Region

Challenges	f	r
1. Low starting salary compared to other professions requiring similar qualifications.	78	3rd
2. Inadequate or inconsistent benefits such as healthcare coverage or paid time off.	20	9th
3. Lack of clear career advancement opportunities within the hospital system.	14	10th
4. Long working hours without proper compensation or overtime benefits.	101	1st
5. Limited access to professional development and training programs.	45	6th
6. High workloads leading to burnout and job dissatisfaction.	89	2nd
7. Unequal treatment or favoritism in terms of promotions or assignments.	40	7th
8. Lack of recognition or rewards for excellence in performance.	35	8th
9. Issues with workplace safety and inadequate equipment and resources.	57	5th
10. Challenges in maintaining work-life balance due to demanding schedules.	62	4th
11. Limited opportunities for participation in research or professional networking.	6	11th
12. Experiencing discrimination or harassment in the workplace.	2	12th

Legend: *Extremely Effective (EE) (4.50 – 5.00), Highly Effective (HE) (3.50 – 4.49), Moderately Effective (ME) (2.50 – 3.49), Slightly Effective (SE) (1.50 – 2.49), Not Effective (NE) (1.00 – 1.49)*

Long working hours, identified as the most frequent challenge, highlight a critical area of concern. RMTs often find themselves working beyond standard hours without proper compensation. This situation is compounded by high workloads, which not only affect the quality of life but also the quality of healthcare services provided. The predominance of high workloads leads to burnout and job dissatisfaction, the second most frequent challenge. The cumulative effect of these factors significantly diminishes job satisfaction and may lead to higher turnover rates (Pratiwi et al., 2021).

Another notable challenge is the issue of low starting salaries, indicating a significant dissatisfaction among RMTs who believe their compensation does not reflect the qualifications and responsibilities required for their role. Inadequate or inconsistent benefits, such as healthcare coverage or paid time off, ranked ninth, further exacerbate their financial and personal strains, undermining their overall job satisfaction and security. Furthermore, the demanding schedules of MTs hinder them from maintaining adequate work-life balance, further leading to stress, burnout, and a decline in mental health, further impacting their ability to perform effectively in their roles.

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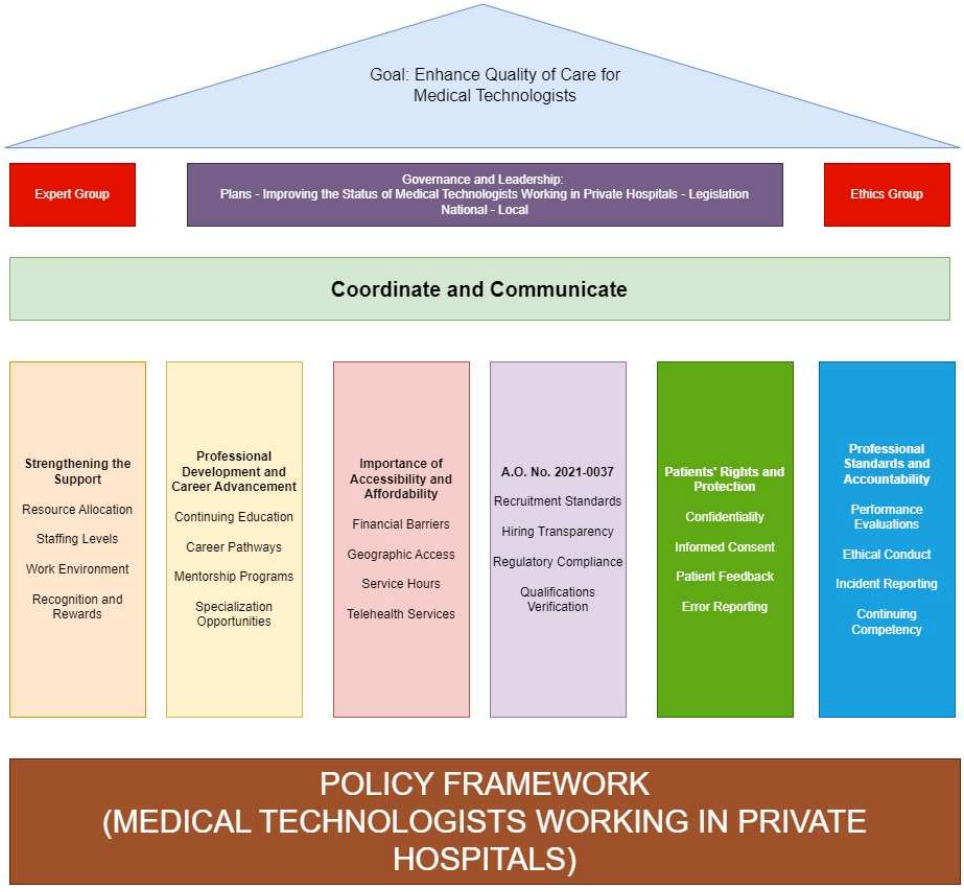
The challenges underscore the broader structural issues within the healthcare sector, including disparities in resource allocation, organizational policies, and workplace culture. The absence of adequate compensation, heavy workloads and limited opportunities for advancement, may contribute to feelings of dissatisfaction, demotivation, and burnout among RMTs (Nuruzzaman et al., 2022). Such negative experiences not only impact individual job satisfaction and morale but also affect the quality of healthcare delivery and patient outcomes. This poses a reminder of the pressing need to confront and rectify the challenges confronting MTs in private hospitals across the Bicol Region. By prioritizing the well-being and professional development of RMTs, healthcare institutions can cultivate a positive and conducive work environment that fosters employee engagement, retention, and, ultimately, the delivery of high-quality care to patients (Hanovic et al., 2019).

6. Formulated Policy Framework to Address the Challenges

Figure 1. Proposed Policy Framework



This policy brief stems from the imperative need to address the pressing issues faced by MTs working in private hospitals across the Bicol Region, particularly concerning their working conditions, compensation, and compliance with regulatory requirements set forth by the Department of Health (DOH). A proposed comprehensive policy framework is developed to address the multifaceted challenges MTs face, thereby enhancing the overall quality of healthcare services delivered in the Bicol Region. (Figure 3). This framework comprises six key components, each

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addressing critical aspects of healthcare delivery and workforce management. By focusing on these critical areas, the framework seeks to foster a supportive, skilled, and ethically sound healthcare environment that benefits the MTs and their patients.

Strengthening the Support

The first component is "Strengthening the Support." This involves multiple dimensions crucial for the MTs well-being and the quality of healthcare services. One key aspect is resource allocation. Resource allocation, adequate staffing, a collaborative work environment, and recognition systems are essential for enhancing their well-being and performance. These measures ensure that technologists are equipped, motivated, and supported to provide high-quality diagnostic services, ultimately contributing to better patient outcomes and a more efficient healthcare system.

Professional Development and Career Advancement

The second component is "Professional Development and Career Advancement." It is critical to sustain a skilled, motivated, and future-ready workforce in medical technology. By offering continuous education, clearly defined career pathways, mentorship programs, and specialization opportunities, healthcare organizations can ensure that their technologists remain at the forefront of their field. This, in turn, enhances the quality of care provided, contributes to professional satisfaction, and supports healthcare delivery's overall efficiency and effectiveness.

Importance of Accessibility and Affordability

The third component is "Importance of Accessibility and Affordability." This ensures that healthcare services are accessible and affordable, fundamental to delivering equitable and comprehensive care. Addressing financial barriers is paramount, as it ensures that all patients can access the necessary diagnostic and therapeutic services regardless of their economic status. Affordable healthcare is both a moral imperative and a practical one, as it can lead to better health outcomes and reduce long-term healthcare costs by facilitating early diagnosis and treatment. Geographical access is another critical component of ensuring equitable healthcare. Services must be available in various locations, including urban, suburban, and rural areas, to avoid disparities in care. By establishing satellite clinics, mobile health units, and community health centers, especially in rural and underserved areas, healthcare providers can extend their reach and ensure all populations can access necessary services. Telehealth services can further bridge this gap by providing remote diagnostic services and consultations, allowing patients to receive care without extensive travel.

A.O. No. 2021-0037

The fourth component is the adherence to "Administrative Order No. 2021-0037," which ensures that recruitment and hiring practices are standardized and transparent. Establishing stringent recruitment standards guarantees that only qualified technologists are hired, which is crucial for maintaining high service quality. Transparent hiring processes foster trust and fairness, ensuring that all applicants are given equal opportunities based on their qualifications. Regulatory compliance with legal and administrative requirements underscores the commitment to lawful and ethical practices. Verifying qualifications ensures that all hired technologists meet the necessary educational and professional standards for providing reliable and high-quality healthcare services.

Patients' Rights and Protection

The fifth component is "Patients' Rights and Protection." Protecting patients' rights is a cornerstone of ethical healthcare delivery. Ensuring confidentiality safeguards patient information, fostering trust and compliance with privacy laws. Informed consent processes ensure that patients fully understand and agree to the tests and procedures, respecting their autonomy and decision-making rights. Implementing mechanisms for collecting and addressing patient feedback allows healthcare providers to improve services based on patient experiences and concerns continually. Establishing error reporting systems is crucial for promptly identifying and addressing diagnostic errors, ensuring patient safety, and improving care quality.

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Professional Standards and Accountability

The last component is "Professional Standards and Accountability." Maintaining professional standards and accountability is essential for ensuring high-quality healthcare delivery. Regular performance evaluations provide a structured approach to assessing and enhancing technologists' performance. Adhering to ethical conduct guidelines ensures that all actions and decisions are made with integrity and in the patient's best interests. Incident reporting processes for professional misconduct allow for swift and appropriate responses to any breaches in conduct, maintaining trust in healthcare services. Ongoing requirements for continuing competency ensure that MTs continuously update their skills and knowledge, keeping pace with advancements in medical technology and practices.

Conclusions

This study underscores the critical role of medical technologists in Bicol Region hospitals. By acknowledging the workforce's strengths and addressing existing challenges, stakeholders can create a more supportive work environment. The support needed includes promoting job security, ensuring fair compensation, optimizing workload distribution, and investing in staff training and development opportunities. By fostering a thriving workforce of medical technologists, the Bicol Region can ensure continued high-quality healthcare services for its residents.

The salient findings led to the following conclusions: 1) The RMTs were primarily middle-aged group dominated by females having salaries commensurate to their working status; 2) They discharged their responsibilities in doing the laboratory tests and procedures with utmost care, observing the ethical values of confidentiality and integrity. Collaboration with other health personnel in the hospital was the very reason why they were able to give the patient and clients the much-needed care, treatment, and diagnosis; 3) In the process of conducting laboratory examination in three phases, the medical technologists were skillful and efficient observing the proper protocols to be able to give accurate result of the test; 4) There was a significant difference along the effectiveness of healthcare delivery as perceived by the clients and medical technologist however despite the difference it turned out to be still inconsistent with the testing procedures. Laborious workload led to long working hours. 5) The findings underscore the crucial role of medical technologists in the healthcare system, highlighting their dedication, professionalism, and commitment to upholding ethical standards and delivering accurate and timely laboratory results. Despite facing numerous challenges, including heavy workloads and limited career advancement opportunities, medical technologists continue to demonstrate resilience and perseverance in fulfilling their responsibilities.

Recommendations

This study recommends that the recruitment and hiring practices for medical technologists must align with the detailed implementing rules and guidelines outlined in Administrative Order No. 2021-0037 to ensure the selection process is conducted fairly, transparently, and in accordance with established standards set by regulatory bodies. Moreover, compliance with Administrative Order No. 2021-0037 fosters professionalism and integrity within the recruitment process, ultimately contributing to the quality of healthcare services provided.

Continuous professional development (CPD) is essential for medical technologists to remain abreast of emerging technologies and advancements in their field. The researcher recommends that RMTs should invest in CPD to enhance their skills, knowledge, and expertise, thereby becoming more competent and confident in their roles. This proactive approach not only ensures the delivery of accurate and reliable laboratory results but also instills a culture of excellence and innovation within healthcare institutions.

A comprehensive policy framework should be implemented across laboratories encompassing strategies aimed at enhancing recruitment practices, promoting professional development opportunities, ensuring fair compensation and benefits, and fostering a supportive work environment. This framework can create a conducive atmosphere for employed MTs to thrive professionally and deliver high-quality services.

Future research could investigate the specific reasons behind the high percentage of non-permanent positions among medical technologists in the Bicol Region. Furthermore, research on the implementation of Executive Order No. 2021-0037 is warranted to evaluate its effectiveness and identify areas for improvement. By assessing the level of compliance and understanding the challenges encountered during implementation, hospitals can refine their strategies and policies to better support medical technologists.

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