

Extent of implementation of Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)

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Abstract

This study aimed to assess the extent of implementation of Republic Act No. 11332, the “Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act,” focusing on its influence on reporting practices among selected health facilities. Specifically, the study examined the relationship between independent variables—policy enforcement, awareness and training, reporting infrastructure, stakeholders’ collaboration, and resource availability and dependent variables such as reporting compliance, timeliness of reports, data accuracy, and public health outcomes. Conducted in Baybay Interlocal Health Zone during January – March 2025, the study tested the hypothesis that there is no significant correlation between the extent of Implementation and the level of effectiveness of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332). Grouped Median, Standard Deviation and Rank Order were used to describe the respondents’ demographic profile and their level of experience regarding the extent of implementation of RA 11332. Additionally, Guilford’s Pearson Correlation Coefficient “r” test (1956) was employed to determine the existence and strength of linear relationships between the variables, based on the coefficient (r) and significance level (p-value), provided the assumptions of the test were met. The research utilized a descriptive-correlational design. The respondents consisted of health professionals of a health facility, both private and public of the Baybay Inter-Local Health Zone of Laguna. Purposive sampling was used to select individuals involved in notifiable disease reporting processes. Data were gathered using a researcher-made and validated questionnaire. The research process included distributing and collecting survey forms, data tabulation, statistical analysis and interpretation of findings. Findings indicated that policy enforcement, awareness and training, and resource availability significantly influenced reporting compliance and timeliness of reports. Moreover, stakeholders’ collaboration and reporting infrastructure were positively correlated with improved data accuracy and better public health outcomes. The study concluded that the comprehensive implementation of RA 11332 requires a multidimensional approach addressing systemic gaps and enhancing inter-agency cooperation. Recommendations include improving training programs, increasing logistical and technological support, and strengthening policy monitoring and evaluation mechanisms.

Keywords: RA 11332; policy enforcement; reporting compliance; public health outcomes; disease surveillance

1. Introduction

Public health plays a crucial role in the well-being of a nation, ensuring that diseases are managed, outbreaks are prevented, and the population's overall health is safeguarded. Many countries lack robust systems for early detection and reporting of infectious diseases, leading to delays in response and containment, as seen during the COVID-19 pandemic. Infectious diseases continue to pose significant global challenges due to their capacity for rapid spread and high mortality. These issues reflect the critical need for

global cooperation, investment in healthcare infrastructure, and innovative solutions to address the growing threat of infectious diseases. In response to the increasing threats of infectious diseases, the Philippine government enacted Republic Act (RA) 11332, known as the “Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act.” The law mandates the reporting of diseases and health events of public concern to ensure timely responses and interventions. Its primary objective is to create an efficient public health surveillance system and enhance the country's disease prevention and control measures. Philippine Government Official Gazette. (2019). Republic Act No. 11332: Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act.

As of 2024, disease surveillance in Southeast Asia has shown significant progress, but challenges persist. The region has made strides in using integrated systems for infectious disease monitoring, such as combining influenza and SARS-CoV-2 sentinel surveillance networks. Countries like Indonesia and Thailand continue to improve their reporting capabilities. However, the accuracy and timeliness of data collection remain inconsistent, especially in areas with limited infrastructure. ASEAN BioDiaspora Virtual Center (ABVC) 2024, Progress in Disease Surveillance in Southeast Asia.

The successful implementation of RA 11332 is crucial in safeguarding the population's health, particularly during health crises such as pandemics, outbreaks, and other emergent public health threats. However, the effectiveness of its implementation depends on multiple factors, such as the level of awareness among stakeholders, the resources allocated for its execution, and the overall compliance of local government units (LGUs) and health facilities. Department of Health. (2020). Early detection allows for rapid intervention, which is critical to containing the spread of infectious diseases. Without timely reporting, health crises can escalate uncontrollably, leading to more infections, hospitalizations, and deaths. Effective disease surveillance systems help authorities identify clusters of infections and implement localized containment measures, such as quarantines or travel restrictions, before they spread nationwide or globally.

This study examines the extent to which RA 11332, “Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act,” has been implemented in the Baybay Inter-Local Health Zone (ILHZ) of Laguna. It particularly focuses on the roles played by public health authorities and the challenges encountered in enforcing the law.

1.1. Background of Study

Public health surveillance is critical to managing and mitigating the spread of diseases, ensuring timely responses to public health threats. Recognizing this necessity, the Philippine government enacted Republic Act No. 11332, or the *Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act*, in 2019. This law aims to strengthen the country's epidemiological surveillance system by mandating the immediate reporting of notifiable diseases and public health emergencies to facilitate effective prevention, control, and response strategies.

RA 11332 provides a legal framework for disease surveillance, obligating healthcare providers, local government units (LGUs), and institutions to report health events promptly through an electronic information system. Additionally, the law outlines penalties for non-compliance and emphasizes the need for interagency collaboration, public awareness, and the integration of modern technology into disease monitoring. However, despite the law's ambitious goals, its implementation has faced significant challenges, revealing gaps that hinder its full operationalization across various regions and sectors.

One of the key problems in implementing RA 11332 is the limited awareness and understanding of the law among stakeholders. Many healthcare professionals, particularly those in rural and underserved areas, are not fully informed of their roles and responsibilities under the law. This knowledge gap often leads to underreporting or delays in submitting critical data. Similarly, the general public has limited awareness of the importance of reporting notifiable diseases and their role in preventing outbreaks. This lack of understanding reduces community involvement, essential for a robust surveillance system.

Resource constraints further impede the law's implementation. While RA 11332 mandates electronic reporting systems, many LGUs face significant technological barriers, including inadequate internet connectivity, outdated equipment, and insufficient data collection and analysis software. The lack of trained personnel to manage these systems compounds the problem, particularly in remote areas with limited health infrastructure. Additionally, budgetary constraints at the local level prevent the allocation of sufficient resources for public health surveillance, limiting the capacity to enforce the law effectively.

Coordination among agencies and stakeholders presents another significant challenge. The law requires collaboration between national and local government units, healthcare institutions, and other relevant agencies. However, operational inefficiencies, such as overlapping roles, unclear responsibilities, and communication gaps, often delay the timely exchange of information and coordinated responses. Regional disparities also highlight inequities in implementation, with urban centers typically demonstrating higher compliance due to better resources, while rural areas struggle to meet the law's requirements.

Compliance issues exacerbate these challenges. During prolonged public health emergencies like the COVID-19 pandemic, healthcare workers experienced reporting fatigue due to the overwhelming volume of cases and the repetitive nature of documentation. Additionally, fear of repercussions, such as stigma, discrimination, or penalties for perceived non-compliance, has deterred some individuals and institutions from adhering to reporting protocols.

Ethical and legal concerns also arise, particularly regarding data privacy and patient confidentiality. While the law emphasizes the importance of accurate data collection, balancing transparency and protecting sensitive information remains a persistent challenge. Furthermore, inconsistent law enforcement undermines its deterrent effect, with many instances of underreporting or non-compliance going unaddressed.

The COVID-19 pandemic brought these challenges into sharper focus, exposing significant weaknesses in the country's public health surveillance system. While the crisis underscored the importance of RA 11332 in managing health emergencies, it also highlighted the urgent need for improvements in infrastructure, workforce, and interagency coordination. These gaps limit the law's effectiveness and compromise the country's overall preparedness for future public health threats.

In summary, systemic, logistical, and socio-cultural challenges hinder the extent of implementation of RA 11332. Addressing these gaps requires a comprehensive approach that includes enhancing public awareness, investing in infrastructure and manpower, improving interagency coordination, and ensuring consistent law enforcement.

This study seeks to examine the extent of implementation of RA 11332, "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act," across different municipalities in the Fourth District of Laguna, particularly the Baybay Inter-Local Health Zone (ILHZ). It aims to identify barriers, evaluate the effectiveness of current strategies, and propose recommendations to enhance compliance and improve the Inter-Local Health Zone's overall public health surveillance capacity. By addressing these issues, the Baybay Inter-Local Health Zone can strengthen its public health surveillance system, ensuring a more effective response to current and future health challenges.

1.2. Theoretical Framework

The theoretical framework for studying the extent of implementation of RA 11332, "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act," is based on several key theoretical perspectives and concepts. These theories help guide the research and provide a structured foundation for understanding the dynamics and factors influencing the extent of implementation of RA 11332 within the different sectors and agencies.

The Public Health Systems Theory emphasizes the interrelated components of health systems and their role in promoting population health. It focuses on the organization, governance, human resources, infrastructure, intersectoral collaboration, and communication systems that collectively shape public health

outcomes. This theory underscores that implementing health laws and policies, such as RA 11332, depends on the smooth integration and coordination of these components.

The extent to which RA 11332 is implemented relies on various interrelated independent variables. These variables can be grouped under the core components of Public Health Systems Theory, highlighting the role of governance, infrastructure, intersectoral partnerships, workforce, and information systems.

Institutional Theory: Effective governance provides the foundation for successfully implementing RA 11332. Governance encompasses the legislative frameworks, leadership, and administrative structures that support health policy enforcement. The passage of RA 11332 reflects the legislative support required to strengthen public health surveillance. However, the actual enforcement of its provisions depends on the political will, clarity of roles, and prioritization of resources by policymakers.

Institutional Theory supports this notion, suggesting that formal organizations and their regulatory frameworks are essential in shaping health system responses. Governance challenges such as inconsistent leadership, corruption, lack of clarity in roles, and poor intergovernmental coordination can hinder the implementation of RA 11332.

The Capacity-Building Theory: The availability of skilled and adequately trained health workers is essential to the success of RA 11332. Implementing mandatory reporting requires health professionals at the grassroots and facility levels to detect health events, adhere to reporting mechanisms, and act promptly to address potential outbreaks.

The Capacity-Building Theory provides insights into this variable by emphasizing the importance of training and workforce development to strengthen system responsiveness. Without sufficient human resources, there will be delays, errors, or gaps in reporting, ultimately reducing the extent of implementation.

The Systems Theory: The operationalization of RA 11332 relies heavily on strong health infrastructure and technological tools. Information systems that allow for real-time disease reporting, data analysis, and coordination are critical to ensuring rapid responses to potential outbreaks. The failure to establish these systems, due to resource constraints or technical challenges, hampers the implementation process.

The Systems Theory further highlights that public health systems operate through complex interdependent processes. A failure in any one system component—whether in logistics, information management, or supply chains—can lead to a breakdown in timely and comprehensive reporting.

The Collaborative Governance Framework supports the idea that partnerships between government agencies, non-governmental organizations, and the private sector foster shared responsibility, resource pooling, and improved accountability.

Collaboration between various sectors is necessary for effective health surveillance and disease containment. RA 11332 calls on both government agencies and local actors to work together to ensure compliance with reporting requirements. Without strong intersectoral partnerships, lapses in communication and coordination can lead to delays in disease detection and reporting, undermining the intent of RA 11332.

The Health Belief Model (HBM) suggests that an individual's perception of risk, severity, and the benefit of preventive action affects their willingness to comply with health policies. Public health authorities must engage communities through education and awareness campaigns to ensure that reporting mechanisms are trusted and accessible. Community engagement is essential for encouraging compliance with reporting protocols and raising awareness about the importance of disease surveillance.

The Theory of Change suggests that continuous assessment and feedback mechanisms are vital to understanding whether goals are being achieved and adjusting strategies as necessary. The implementation of RA 11332 relies on mechanisms to monitor compliance, evaluate reporting efforts, and hold agencies accountable for their roles.

Monitoring allows for identifying gaps in implementation, analyzing reporting timeliness, and improving system performance. Regular audits, performance evaluations, and reporting benchmarks are critical to ensuring that RA 11332 fulfills its intended purpose.

The Public Health Systems Theory serves as the overarching framework for understanding how

different factors interact to influence the extent of implementation of RA 11332. It integrates interrelated variables, such as governance, workforce capacity, infrastructure, intersectoral partnerships, and community engagement, to assess the systemic influences on policy adherence. The supporting theories (e.g., Institutional Theory, Capacity-Building Theory, Systems Theory, The Collaborative Governance Framework, The Health Belief Model and the Theory of Change) explain how these variables interact and affect the dependent variable.

By applying these theoretical perspectives, this framework provides a comprehensive understanding of the multidimensional factors that affect how RA 11332 is implemented across varying contexts and administrative units.

1.3. Conceptual Framework

The paper is descriptive and uses data gathered from various resources available on the Internet, including documents, journal articles and books related to the topic. The subsequent documentary analysis presents the discussion relevant to the paper's postulate.

Based on the initial theoretical framework, the researcher posits that the relationship between the independent variable and dependent variable is depicted in the following figure:

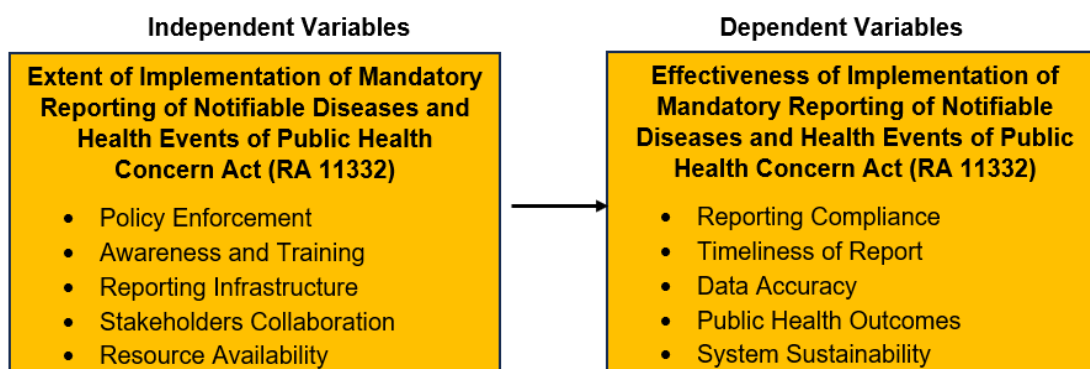


Figure1. The Research Paradigm of the Study

Figure 1. These variables represent the components of the public health system that affect the extent of RA 11332, “Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act” implementation. Independent Variables (Extent of Implementation of RA 11332) consist of Policy Enforcement, Awareness and Training, Reporting Infrastructure, Stakeholders Collaboration and Resource Availability.

Based on the public health systems theory, these variables measure the success of implementing RA 11332. Dependent Variables (Effectiveness of Implementation of RA 11332) consist of Reporting Compliance, Timeliness of Report, Data Accuracy, Public Health Outcomes and System Sustainability.

This conceptual framework serves as the foundation for analyzing the extent of RA 11332's implementation. It identifies the key factors that may influence its success and highlights the relationships between these variables.

1.4. Statement of the Problem

This study assessed the extent of implementation of Republic Act No. 11332, the “Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act,” in Laguna's Baybay Inter-Local Health Zone (ILHZ). Specifically, it sought to answers to the following questions:

1. What is the extent of implementation of RA 11332 among health professionals, based on the following factors:
 - 1.1 Policy Enforcement
 - 1.2 Awareness and Training
 - 1.3 Reporting Infrastructure
 - 1.4 Stakeholders Collaboration
 - 1.5 Resource Availability
2. What is the level of effectiveness of RA 11332 among health professionals, based on the following factors:
 - 2.1 Reporting Compliance
 - 2.2 Timeliness of Report
 - 2.3 Data Accuracy
 - 2.4 Public Health Outcomes
 - 2.5 System Sustainability
3. Is there a significant correlation between the extent of Implementation and the level of effectiveness of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)?

1.5. Research Hypothesis

There is no significant correlation between the extent of Implementation and the effectiveness of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332).

1.6. Scope and Limitations of the Study

This study focused on the extent of implementation of RA 11332 in the Baybay Interlocal Health Zone (ILHZ) Municipalities in Laguna. It included assessing health facilities and LGUs to evaluate their compliance with the law. The research did not cover non-health-related aspects of disease reporting systems, such as the economic impact of RA 11332 on businesses or the broader socioeconomic implications of the law.

1.7. Significance of Study

The researcher believes the study will provide valuable insights into the implementation of RA 11332 and the challenges faced by the healthcare system enforcing the law. This study benefits the following individuals and agencies:

Researcher. Researchers will gain a deeper understanding of the factors influencing the successful implementation of health-related laws. This contributes to their expertise in public health governance and policy analysis.

Policy makers. The results obtained will provide evidence-based recommendations for improving law enforcement.

Healthcare Professionals. including licensed or non-licensed practitioners, will be the focus of this study, which will highlight areas where further training and support are needed to ensure compliance with RA 11332.

Local Government Units (LGUs). The research will illuminate LGUs' role in implementing public health laws and provide suggestions for strengthening their involvement.

The General Public. An improved understanding of the implementation of RA 11332 can lead to more effective public health interventions, benefiting the entire population by reducing the risk of disease

outbreaks.

1.8. Definition of Terms

The following terms are defined for a clearer understanding of this study:

Notifiable Diseases: Diseases that are required by law to be reported to government authorities to allow for monitoring and controlling their spread.

Inter-Local Health Zone (ILHZ): a collaborative arrangement where multiple local government units (LGUs) work together to address health concerns and deliver integrated health services within a specific geographic area.

Health Professional: an individual who is trained, licensed, and qualified to provide disease surveillance activities

Disease surveillance activities refer to systematic methods of collecting, analyzing, interpreting, and disseminating health data to monitor, prevent, and control diseases and health-related conditions.

Compliance: Adherence to laws, regulations, and standards that the government or relevant authorities set.

LGUs: Local Government Units that are responsible for implementing government policies at the local level.

1.9. Review of Related Literature and Studies

This chapter presented the related literature and studies that supported the extent of implementation of Republic Act 11332 (RA 11332), or the "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act" in the Philippines. This study synthesizes relevant literature to provide a detailed analysis of how the law has been implemented across different sectors, identifying key challenges, successes, and areas for improvement.

1.9.1. Related Literature

Implementing Republic Act No. 11332, also known as the "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act," has strengthened the Philippines' disease surveillance and response systems. Alburo (2021) states that the law has been a legal backbone in mandating public and private healthcare providers to report notifiable diseases promptly and accurately. Furthermore, it reinforces data protection protocols in alignment with the Data Privacy Act of 2012, ensuring that patient confidentiality is preserved even while advancing public health imperatives.

RA 11332 institutionalized key mechanisms such as the Philippine Integrated Disease Surveillance and Response (PIDSRS) system, which facilitates real-time reporting and coordinated action. The Department of Health (DOH) and local government units (LGUs) are at the forefront of implementing this mandate, working collaboratively to ensure epidemiological investigations, contact tracing, and isolation protocols are activated efficiently. Pamaos and Labao (2019) emphasize the importance of functional epidemiology and surveillance units at all levels of government, noting that these units play a crucial role in risk assessment, disease monitoring, and rapid response coordination.

However, despite the comprehensive legal framework provided by RA 11332, several implementation challenges persist. Alburo (2021) notes that resource limitations, especially at the barangay and municipal levels, often hinder full compliance with surveillance protocols. Inconsistencies in reporting

and inadequate infrastructure also hamper data collection, dissemination, timeliness, and quality. This observation is echoed by Cabrera and Uy (2020), who argue that while the law is ambitious in scope, many local health units lack sufficient funding, digital tools, and trained personnel to operationalize its provisions effectively.

Moreover, the COVID-19 pandemic tested the resilience and effectiveness of RA 11332. During this time, the law was widely invoked to enforce mandatory quarantines, disease reporting, and containment protocols. Nicolas and De Vega (2019) note that this period brought the law into the public spotlight, especially its penal provisions applied to individuals and institutions found guilty of non-compliance. However, these enforcement efforts also revealed gaps in inter-agency coordination and public cooperation, which limited the law's full potential during a national health crisis.

In a broader evaluation, Salvana et al. (2021) highlight the importance of integrating RA 11332 with digital surveillance innovations to improve disease tracking. Their study recommends using interoperable data systems and mobile-based applications for real-time updates, especially in rural and geographically isolated areas. Similarly, Garcia and Santos (2022) underscore the potential of digital health platforms in reducing reporting delays and supporting LGUs in decision-making during outbreaks.

Furthermore, Del Rosario and Manalili (2023) emphasize the need for consistent public health communication strategies, which should be embedded within the implementation framework of RA 11332. According to their findings, misinformation and public mistrust during the pandemic significantly impacted compliance rates, indicating that legal mandates must be supported by robust educational and communication efforts to foster community engagement and behavioral change.

In sum, while RA 11332 offers a solid legal foundation for disease surveillance and public health response in the Philippines, its success hinges on effective local implementation, inter-sectoral collaboration, and the integration of digital tools. Continuous training of healthcare workers, strengthening public trust, and enhancing reporting infrastructure remain critical to achieving the law's full potential.

1.9.2. Public Health Surveillance and Disease Reporting

Public health surveillance is a core function of health systems, enabling the timely collection, analysis, and dissemination of health data to prevent and control diseases. A foundational study by Thacker and Berkman (1988) emphasized that systematic data collection is essential for evidence-based decision-making and effective public health action.

In the Philippine context, disease surveillance and monitoring (DSM) have been established as a national strategy to mitigate health-related and socio-economic impacts. As de Vries et al. (2021) describe, this system depends on the coordination of government stakeholders across all phases of surveillance—from case detection and registration to information sharing, data analysis, response, and post-event evaluation.

The Philippine Integrated Disease Surveillance and Response (PIDSRS) system, introduced by the Department of Health (DOH) in 2007, currently monitors 25 diseases and syndromes with outbreak potential. These include vaccine-preventable, vector-borne, zoonotic, and water- and food-borne diseases. Since its implementation, surveillance capabilities have gradually improved; however, structural and resource-related limitations persist. As Jayatilleke (2020) noted, the Philippines continues to face challenges in achieving rapid identification and containment of outbreaks, particularly in rural and under-resourced areas.

Low- and middle-income countries (LMICs), including the Philippines, are particularly vulnerable to infectious and vector-borne diseases due to factors such as tropical climate, urban crowding, and mobility. The World Health Organization (WHO, 2020) stresses that LMICs should prioritize surveillance of high-burden diseases, yet many such nations struggle with outdated legal frameworks, fragmented infrastructure, and competing policy priorities.

Mendoza and Barrameda (2021) point out that while surveillance systems like PIDSRS represent critical progress, the lack of integration between local surveillance units and national databases often results in

delays or data loss. This fragmentation limits real-time insights and weakens the agility of public health responses. Similarly, Tan and Robles (2022) argue that intersectoral collaboration remains weak, particularly between local governments and regional DOH offices, undermining the timely execution of disease control measures.

In addition, the COVID-19 pandemic exposed both strengths and gaps in existing systems. While RA 11332 and PIDSR provided a legal and operational foundation for mandatory disease reporting, the pandemic highlighted deficiencies in digital infrastructure and case-level data harmonization. Lopez and Dizon (2021) recommend expanding the use of digital surveillance tools, such as mobile health platforms and electronic reporting systems, to enhance responsiveness and reduce manual workload at the community level.

Cross-country comparisons provide further insights. Chen et al. (2020) found that integrated digital platforms and routine data quality audits in Thailand and Vietnam significantly improved outbreak detection and containment. The Philippines, by contrast, remains in the early stages of adopting such advanced surveillance models.

Despite these constraints, ongoing investments in surveillance training, public health informatics, and laboratory capacity are promising. Garcia et al. (2023) underscore that future preparedness in the Philippines hinges on legal compliance and sustainable investments in surveillance technology, human resource development, and decentralized response systems.

In conclusion, while the Philippines has made strides in establishing disease surveillance infrastructure, further enhancements in data integration, digital innovation, and interagency coordination are essential. Strengthening these areas will ensure the country is better equipped to detect, report, and respond to endemic diseases and emerging health threats.

1.9.3. Challenges in Implementing RA 11332

Challenges in disease reporting, particularly for notifiable diseases, are often marked by delays, data incompleteness, and inconsistent compliance across reporting entities. Various studies underscore that these barriers stem from administrative, technical, and procedural inefficiencies. Timeliness, a key performance indicator in public health surveillance, is frequently undermined by bottlenecks in communication and reporting processes, which ultimately compromise rapid public health response.

A critical issue is the delay in notification at multiple levels. These delays span from the onset of illness to laboratory confirmation and subsequent transmission of information to health authorities. PLOS ONE (2017) noted that the multiple handoffs between health care providers, laboratories, and health departments create substantial lags in the disease notification chain. BMC Medical Informatics and Decision Making (2019) further illustrates that manual processes and fragmented data flow increase the risk of reporting delays and inconsistencies in case definitions or diagnostic criteria.

Reliance on traditional modes of communication, such as fax, paper-based forms, and mailed reports, remains a persistent obstacle. Although Electronic Laboratory Reporting (ELR) and other digital tools show promise in automating and expediting the process, their implementation across the Philippines remains uneven. BMC Public Health (2019) and Tanaka et al. (2021) report that many LMICs, including the Philippines, struggle with limited access to reliable ICT infrastructure, underdeveloped data systems, and minimal investment in digital health technologies.

Completeness of reports is another systemic challenge. Often, reports lack essential epidemiological data such as patient demographics, exposure history, or laboratory results. Garcia et al. (2022) observed that discrepancies between provider reports and laboratory submissions frequently lead to underreporting or duplicated records. These inconsistencies reduce the quality of surveillance data and hinder comprehensive outbreak analysis.

Additionally, compliance among mandated reporting entities—including private hospitals, clinics, and local government units—is inconsistent. Despite Republic Act No. 11332's mandate for timely and

accurate reporting, field-level adherence varies significantly, often reflecting resource disparities between urban and rural health units. Santos (2020) and Lopez & Cruz (2021) argue that the lack of standardized reporting practices and limited enforcement of penalties contribute to these gaps.

Workforce capacity remains a foundational barrier. Many local epidemiology and surveillance units lack trained personnel to manage real-time reporting, outbreak investigation, and health communication. Jayatilleke (2020) highlights that insufficient training, high staff turnover, and overwhelming caseloads during health emergencies exacerbate the problem. Moreover, capacity-building programs at the local level are often irregular and underfunded.

Legal and ethical tensions also influence implementation. RA 11332 emphasizes data confidentiality, aligning with the Data Privacy Act of 2012, yet surveillance systems require access to identifiable health information. Alcantara et al. (2021) point out that confusion over legal interpretations of “permissible disclosure” during outbreaks has led to hesitancy or resistance among some reporting entities. This tension between privacy and public health underscores the need for clear protocols and safeguards.

Another important consideration is inter-agency coordination. Although RA 11332 outlines responsibilities for various stakeholders, communication and operational alignment gaps persist between local health units and regional DOH centers. Mendoza & Delos Santos (2023) note that the lack of interoperability between data systems and unclear lines of accountability contribute to delays in outbreak verification and response.

Literature suggests several strategies to address these challenges: investing in digital health infrastructure, adopting automated reporting systems, standardizing reporting formats, and providing sustained training for surveillance officers and healthcare providers. Strengthening inter-agency coordination, ensuring adequate funding, and reinforcing compliance through policy enforcement are also essential. However, as the World Bank (2022) stresses, these reforms require long-term political will, cross-sectoral collaboration, and a sustained commitment to public health preparedness.

Ultimately, the implementation of RA 11332 must be strengthened through a multi-dimensional approach that integrates legal, technological, human, and institutional resources. Prioritizing public trust, privacy, and transparency alongside technical efficiency will ensure that the law’s intent to protect public health can be fully realized.

1.9.4. Global Perspectives on Disease Reporting

Disease reporting is a global public health security cornerstone, enabling early detection, situational awareness, and timely responses to emerging health threats. At the heart of this global framework is the International Health Regulations (IHR, 2005), a legally binding instrument adopted by 196 countries—including the Philippines—which mandates the prompt reporting of events that may constitute a Public Health Emergency of International Concern (PHEIC) (World Health Organization, 2005). RA 11332 aligns with these international standards, reflecting the Philippines’ commitment to disease surveillance and timely public health communication within the global health community.

However, the effectiveness of IHR implementation varies considerably across regions, with disparities influenced by a country’s public health infrastructure, governance, and resource availability. According to Talisuna et al. (2020), many low—and middle-income countries (LMICs) struggle with insufficient laboratory capacity, weak health information systems, and under-resourced national focal points, all of which limit their ability to comply with international reporting obligations.

In contrast, high-income countries benefit from stronger public health systems and more advanced digital infrastructures, facilitating better compliance with IHR standards. For instance, South Korea’s response to COVID-19, characterized by rapid case detection, transparent data sharing, and digital contact tracing, was widely regarded as a model of best practice (Chen et al., 2021). Their success highlighted the value of real-time surveillance platforms and intersectoral coordination in enhancing disease reporting

efficacy.

Nonetheless, the COVID-19 pandemic also revealed critical gaps in global disease reporting. Several countries, including some with advanced health systems, encountered challenges in fulfilling their IHR reporting responsibilities. These included delayed notification of initial outbreaks, reluctance to share data due to political or economic concerns, and weak interagency collaboration, which impeded a cohesive international response (Kamradt-Scott et al., 2021).

Studies also emphasize the need for stronger global coordination mechanisms. Gostin et al. (2020) noted that fragmented responses during the pandemic underscored the limitations of existing legal and operational frameworks. They advocate for reforms in the IHR, including enhanced enforcement mechanisms, increased transparency, and a more proactive role for the WHO in verifying and disseminating outbreak information.

Beyond legal frameworks, technological disparities significantly shape the landscape of global reporting. Digital surveillance systems, such as DHIS2 (District Health Information Software 2), have improved data collection and reporting in several LMICs. Still, their effectiveness is contingent upon adequate training, funding, and local adaptation (Jao et al., 2021). The Philippines, for example, has adopted digital platforms like the Philippine Integrated Disease Surveillance and Response (PIDS), yet integration with global systems remains partially limited by infrastructure gaps.

To address these challenges, scholars recommend a multifaceted approach: increased investment in health system strengthening, support for interoperable digital surveillance tools, and robust capacity-building programs for national and subnational health authorities (Lee et al., 2020). These strategies are crucial for enhancing national reporting capacities, like those mandated under RA 11332, and international compliance under the IHR framework.

RA 11332 is a critical step in aligning Philippine public health law with global standards. Yet, like all national laws on disease reporting, its effectiveness is inherently linked to global structures, resources, and cooperation. Thus, strengthening international disease surveillance requires local legal compliance and sustained global solidarity, knowledge exchange, and equitable access to surveillance technologies and infrastructure.

1.9.5. Digital Innovations in Surveillance

Digital innovations have significantly transformed public health surveillance by enhancing disease monitoring systems' speed, accuracy, and breadth. Technologies such as artificial intelligence (AI), big data analytics, and mobile health (mHealth) tools now enable real-time data collection and predictive analysis capabilities vital for the early detection and rapid response to public health threats.

AI-powered platforms such as BlueDot and HealthMap have demonstrated the potential of using natural language processing and machine learning to mine vast volumes of digital data from online news, official health alerts, and social media. These tools often identify early signals of outbreaks ahead of traditional surveillance systems. For example, BlueDot flagged the emergence of COVID-19 days before the first official WHO report, demonstrating the disruptive potential of AI in epidemic intelligence (Bogoch et al., 2020; Khan et al., 2020).

In addition, mobile applications and wearable devices are becoming increasingly integrated into disease surveillance frameworks. During the COVID-19 pandemic, Singapore's TraceTogether app demonstrated how Bluetooth-enabled contact tracing could supplement traditional epidemiological tools (Abeler et al., 2020). Radin et al. (2020) also explored how wearable technology, such as smartwatches and fitness trackers, can monitor physiological signals like heart rate and body temperature to detect early signs of infection before clinical symptoms emerge.

Electronic Health Records (EHRs) and automated electronic reporting systems have enhanced surveillance by improving data accuracy, reducing delays, and minimizing human error. Buehler et al. (2008)

emphasized that the automated extraction of notifiable disease data from EHRs significantly improves the timeliness of reporting, particularly during public health emergencies where rapid decision-making is essential. Recent studies by Mehrotra et al. (2021) have shown that integrating EHR-based surveillance with national reporting systems improves completeness and allows for near real-time monitoring of patient trends.

Despite these advancements, several ethical and operational challenges remain. Data privacy and digital equity are two major concerns. Many digital surveillance tools require collecting sensitive health and location data, raising alarms about potential misuse, especially in contexts with weak regulatory oversight (Morley et al., 2020). These concerns are particularly salient in LMICs, where legal protections for personal data may be underdeveloped or inconsistently enforced. Furthermore, digital divides—limited internet access, low digital literacy, and infrastructure gaps—pose barriers to widespread adoption in resource-constrained settings (WHO, 2022).

In the Philippine context, the integration of digital tools with traditional systems like the Philippine Integrated Disease Surveillance and Response (PIDSR) remains partial. While efforts to digitize surveillance through platforms such as the COVIDKaya app and the FASSSTER system (Feasibility Analysis of Syndromic Surveillance using Spatio-Temporal Epidemiological Modeler) were introduced during the pandemic, these tools faced implementation challenges, including uneven local uptake and system interoperability issues (Aguirre et al., 2021; DOH, 2021).

Researchers emphasize the importance of interoperability, ethical design, and participatory approaches to fully realize the benefits of digital surveillance. As Ravi et al. (2020) argue, digital tools must be embedded within well-governed health systems and complemented by public trust, community engagement, and legal frameworks that uphold privacy and consent.

In sum, while digital innovations hold enormous potential for modernizing public health surveillance, their effectiveness depends on thoughtful implementation, robust data governance, and equitable access. Future advancements should focus on strengthening system integration, building local capacity, and ensuring that these technologies are used ethically and inclusively, particularly in settings like the Philippines, where surveillance laws like RA 11332 can benefit from digital support while safeguarding individual rights.

1.10. Synthesis

The literature surrounding the implementation of Republic Act No. 11332 (RA 11332) highlights its critical role in enhancing public health surveillance and disease reporting in the Philippines. By clearly defining the responsibilities of healthcare professionals and institutions, RA 11332 has played a pivotal role in creating a more cohesive and integrated system for disease monitoring, which is crucial for both disease prevention and rapid response. Albuero (2021) noted that this legislation has strengthened the country's disease surveillance infrastructure, facilitated more efficient reporting and coordinated public health interventions. However, the expanded body of literature points to several ongoing challenges in fully realizing the law's potential, particularly regarding disparities in resources and capacity between urban and rural local government units (LGUs) (Lim & Padilla, 2021; Philippine Institute for Development Studies [PIDS], 2020).

The Philippine Integrated Disease Surveillance and Response (PIDSR) system has been instrumental in improving the monitoring of disease outbreaks; however, significant gaps remain in local preparedness, especially in rural regions (Lim & Padilla, 2021). Additionally, persistent issues such as inconsistent compliance with reporting protocols and delays in disease notification continue to pose challenges (Santos, 2020). These difficulties, compounded by insufficient training and outdated reporting methods, reflect broader challenges faced by other countries with similar public health frameworks, including Vietnam (Nguyen et al., 2019). To address these gaps, there is an urgent need to enhance the enforcement of RA 11332, particularly through improved coordination between agencies and allocating more resources to support local health units.

On the global stage, the integration of digital technologies has significantly transformed disease surveillance systems, providing valuable tools for real-time data collection and analysis. Artificial intelligence

(AI), big data analytics, and mobile health applications have revolutionized public health monitoring (Bogoch et al., 2020). The Philippines could greatly benefit from adopting such digital innovations, including electronic reporting systems like SORMAS, which have proven to improve the timeliness and accuracy of disease reporting (Garcia & Tolentino, 2022). However, as digital tools are introduced, they must be implemented with due consideration for privacy and data protection, by the stipulations of the Data Privacy Act (Santos, 2020).

At an international level, the Philippines' approach aligns with the guidelines set forth by the International Health Regulations (IHR) of 2005, which stress the need for rapid and accurate disease reporting (World Health Organization [WHO], 2021). Comparative studies with other nations, particularly those in the Asia-Pacific region, emphasize that the success of disease reporting systems depends on factors such as political will, sufficient resource investment, and effective collaboration between sectors (Talisuna et al., 2020; Chen et al., 2021). These global experiences offer critical insights into improving the implementation of RA 11332, particularly through sustained investment in digital infrastructure and public health technologies.

In summary, while RA 11332 has made notable advancements in strengthening the Philippines' disease surveillance framework, its full implementation will depend on addressing challenges related to resource distribution, inter-agency coordination, and the integration of digital innovations. By leveraging the lessons learned from international best practices and adopting cutting-edge technologies, the Philippines can further enhance its disease reporting system and improve its capacity to respond to future public health threats.

2. Methodology

This chapter presents the methodology used in this study. It contains the research design, respondents, sampling techniques, research instrument and statistical treatment.

2.1. Research Design

This study used a descriptive research design, adopting a quantitative research technique to evaluate the extent of the implementation of RA 11332, the "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act." This approach allowed a comprehensive analysis of both measurable implementation outcomes and the contextual factors that affected the process.

2.2. Respondents of the Study

The study's respondents are 42 health professionals from a health facility, both private and public, in the Baybay Inter-Local Health Zone of Laguna, which includes the municipalities of Kalayaan, Paete, Pakil, Pangil, Siniloan, Famy, Mabitac, and Santa Maria.

2.3. Sampling Technique

Purposive sampling, or judgmental or selective sampling, is a non-probability sampling technique where the researcher intentionally selects participants based on their relevance to the research objectives. It focused on individuals with specific knowledge, roles or experience related to the subject under study.

Purposive sampling ensured that only key stakeholders involved in the implementation process were included. This approach yielded focused and meaningful data, as participants were selected based on their ability to provide insights into the enforcement, challenges, and effectiveness of the law.

2.4. Research Procedure

The respondents were given two parts of a questionnaire. Part I contains the respondent's profile, such as Name, Age, Education, Facility Type, position in the health facility and the years of experience in Public Health. Although the demographic profile of the respondents will not be considered a variable, the researcher included it to obtain additional information about the respondents. Part II included the level of effectiveness as perceived by the respondents. The respondents were asked to use the Likert-type Scale of responses: 5 – Very High, 4 – High, 3 – Moderate Level, 2 – Low Level, and 1 – Very Low Level.

2.5. Research Instrument

The primary instrument used in the research is a Questionnaire for quantitative data. The survey questionnaire captured data from health workers involved in implementing RA 11332. It focused on compliance with reporting standards, technological capacity, training and challenges health facilities face. An interview guide was used to collect quantitative data. The interview guide gathered in-depth qualitative data from key informants.

2.6. Statistical Treatment of Data

The Researcher used the following statistical tools in the study, as shown in the table below.

Extent of Implementation of Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)	Grouped Median, Standard Deviation, and rank order describe the demographic profile.
Demographic Profile of the Respondents	
Level of effectiveness as perceived by the respondents of the RA 11332 "Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act."	Grouped Median, Standard Deviation, and rank order are used to describe the level of experiences of the respondents with the Extent of Implementation of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)
The correlation on the level of experiences of the respondents with the Extent of Implementation of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)	The level of correlation between the extent of Implementation and the level of effectiveness of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332) using the Pearson Correlation Coefficient "R" Test

Pearson Correlation Coefficient

Guilford developed the Pearson Correlation Coefficient "R" test in 1956 to quantify and analyze the linear relationship between two variables. It is used to determine whether a linear relationship exists and how strong it is (as indicated by the p-value and coefficient r , respectively). This test is only used when the underlying assumptions are true.

The Rule of Thumb, as presented by Guildford (1973), was adopted to interpret the strength of the relationship. Table 3001 summarizes Guildford's (1973) Rule of Thumb for the interpretation of the correlation coefficient (r)

Table 1. Guildford's (1973) Rule of Thumb for Interpretation of Correlation Coefficient

<i>r</i>	Interpretation
< .20	Slight, almost negligible relationship
.20 - .40	Low correlation, definite but small relationship
.40 - .70	Moderate correlation, substantial relationship
.70 - .90	High correlation, marked relationship
> .90	Very high correlation, very dependable relationship

3. Results and Discussion

This chapter focuses on the presentation, analysis, and interpretation of data according to the study's results and analysis.

3.1. Overall Extent of Implementation of RA 11332 among Health Professionals.

Table 2. Extent of Implementation in Terms of Policy Enforcement

<u>Indicator</u>	<i>M</i>	<i>SD</i>	<i>Verbal Interpretation</i>
1. Our facility submits reports on notifiable diseases promptly.	4.69	0.52	Very High Level
2. The reports we submit are complete and accurate.	4.57	0.77	Very High Level
3. We follow the guidelines and reporting schedules outlined in RA 11332.	4.55	0.83	Very High Level
4. Our facility's designated unit is responsible for monitoring RA 11332 compliance.	4.62	0.66	Very High Level
5. Our facility frequently reports notifiable diseases to the appropriate health authorities.	4.69	0.72	Very High Level
Overall for Policy Enforcement	4.62	0.60	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the extent of implementation regarding policy enforcement among health

professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation. This table provides an analysis of the level of policy enforcement regarding reporting notifiable diseases within a healthcare facility. The overall mean score for policy enforcement is 4.62, with a standard deviation of 0.60, indicating a very high level of adherence to the reporting guidelines. This suggests that the facility complies robustly with Republic Act No. 11332 (RA 11332), which mandates the timely and accurate reporting of notifiable diseases to health authorities. This outcome corroborates the findings of Alburo (2021), who emphasized RA 11332's central role in strengthening the Philippines' disease surveillance and response systems through compulsory and systematic disease reporting.

The first indicator, which measures the timeliness of report submissions, achieved the highest mean score (4.69) with a low standard deviation (0.52). This reflects a strong and consistent commitment to reporting within the required timeframes, consistent with the argument by Thacker and Berkelman (1988), who highlighted the critical role of timely disease reporting in public health decision-making. However, despite strong performance at the facility level, research highlights that delays in the communication flow between healthcare providers and laboratories can still impede national response efforts (PLOS ONE, 2017). Hence, enhancing communication systems further could help prevent delays during future outbreaks.

The second indicator, assessing the completeness and accuracy of the reports, scored 4.57 with a standard deviation of 0.77. This high score aligns with the work of Buehler et al. (2008), who identified that electronic health records and structured reporting frameworks improve accuracy in disease surveillance. However, the observed variation indicates occasional discrepancies, a challenge noted in BMC Medical Informatics and Decision Making (2019), where incomplete data fields and inconsistent reporting across departments were highlighted. Standardized training programs and consistent auditing processes may mitigate these discrepancies.

The third indicator, which measures compliance with the specific reporting schedules outlined by RA 11332, received a mean score of 4.55, with the highest variability ($SD = 0.83$). Although the average compliance is strong, the higher variability indicates inconsistencies across different departments. Similar challenges were identified in the nationwide implementation of RA 11332 by Santos (2020) and the Republic Act No. 11332 (2019), who noted disparities in awareness and capacity among healthcare personnel. This suggests that while the law is clear, its practical application can vary and should be supported by ongoing education and monitoring efforts.

The fourth indicator examined the presence of a designated unit responsible for monitoring RA 11332 compliance, which scored a mean of 4.62 ($SD = 0.66$). This score reflects the facility's strong commitment to the surveillance function. Pamaos and Labao (2019) emphasized that effective epidemiology and surveillance units are essential for localizing response strategies that align with the legal framework. While most respondents confirmed the presence of the designated unit, its effectiveness could be enhanced by establishing structured feedback systems, as the World Health Organization (2021) recommended to bolster public health systems.

The final indicator evaluated the reporting frequency to health authorities, with a mean score of 4.69 ($SD = 0.72$), indicating a consistent and robust reporting culture within the facility. This aligns with the priorities outlined in the Philippine Integrated Disease Surveillance and Response (PIDSR) framework. However, literature cautions that frequent reporting alone cannot overcome data completeness and technological infrastructure issues, which can hinder national health objectives (Jayatilleke, 2020; de Vries et al., 2021). To further improve reporting efficiency, invest in digital infrastructure, including innovations like Electronic Laboratory Reporting (ELR) and AI-based monitoring systems (Bogoch et al., 2020).

Overall, the facility's very high level of compliance (mean = 4.62) demonstrates strong implementation of RA 11332. Nonetheless, the variability observed in data accuracy and guideline adherence reflects ongoing challenges, which mirror those faced at the national and global levels, including resource limitations, training gaps, and uneven implementation across units (BMC Public Health, 2019; WHO, 2005). Addressing these challenges through capacity building, automation, and improved inter-agency coordination would enhance the

consistency and reliability of notifiable disease reporting. Moreover, ensuring surveillance practices comply with the Data Privacy Act is crucial for maintaining public trust and ethical standards in disease monitoring.

Table 3. Extent of Implementation in Terms of Awareness and Training

<u>Indicator</u>	<i>M</i>	<i>SD</i>	<i>Verbal Interpretation</i>
1. We are familiar with RA 11332 and its disease reporting and public health emergency response provisions.	4.38	0.79	Very High Level
2. RA 11332 is important in controlling and preventing infectious diseases.	4.60	0.80	Very High Level
3. Our facility provides sufficient trainings regarding RA 11332 guidelines.	4.00	0.94	High Level
4. Our facility provides information materials (e.g., posters, pamphlets, online resources) about RA 11332 in our workplaces.	4.19	0.99	High Level
5. I feel confident in applying RA 11332 in my daily work.	4.31	0.87	Very High Level
Overall for Awareness and Training	4.30	0.74	High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00=Very High Level (VH), 3.41–4.20=High Level (H), 2.61–3.40=Moderate Level (M), 1.81–2.60=Low Level (L), 1.00–1.80=Very Low Level (VL).

The table presents the extent of implementation in terms of awareness and training among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

This table offers a thorough analysis of awareness and training related to Republic Act No. 11332 (RA 11332), a key component in ensuring the effective enforcement of the law.

The first indicator which assesses familiarity with RA 11332 reported high awareness (mean = 4.38, SD = 0.79) is in agreement with the observations made by Alburo (2021), who highlighted that RA 11332 has notably increased awareness about the responsibilities associated with disease reporting. This suggests that a large proportion of employees are familiar with the law's guidelines, particularly concerning disease reporting and the management of health-related events. However, the standard deviation reflects some variation in the level of awareness, aligning with Pamaos and Labao's (2019) statement that effective surveillance necessitates continuous training at various government levels. This variability calls for periodic refresher sessions to maintain comprehensive understanding across all employees.

The second indicator, measuring the perceived significance of RA 11332 reported the highest mean score of 4.60, (SD = 0.80), participants strongly agree on its vital role in controlling and preventing infectious diseases. This supports the literature that underlines the law's crucial role in public health systems. Cabrera and Uy (2020) emphasized how RA 11332 strengthens public health response mechanisms by promoting compliance and coordination between local and national health authorities. However, the slight variation in responses (SD = 0.80) reflects the challenges noted by Nicolas and De Vega (2019), who observed that while the law is crucial, its application can sometimes be unclear, especially during national health crises like the COVID-19 pandemic.

The third indicator assesses the availability of training programs (mean = 4.00, SD = 0.94). The results indicate that training is available but may not be uniformly implemented, a challenge also recognized

by Garcia and Santos (2022). They pointed out that effective digital health platforms and continuous educational initiatives are vital for improving training, particularly within local government units. The higher standard deviation (0.94) signals inconsistencies in training availability and quality, possibly reflecting logistical challenges, as Cabrera and Uy (2020) mentioned. Expanding access to standardized, recurring training programs would ensure that all employees are equally equipped to apply the law's provisions effectively.

The fourth indicator, which assesses the availability of informational resources (mean = 4.19, SD = 0.99), is consistent with Del Rosario and Manalili's (2023) findings, who identified that misinformation and a lack of public trust could undermine compliance. The significant variation in responses (SD = 0.99) suggests that while some employees have easy access to materials, others may face obstacles in obtaining necessary information. This issue, noted by Alburo (2021), indicates that uneven dissemination of information could weaken RA 11332's enforcement. Organizations might benefit from utilizing more varied and widespread information distribution methods, including digital formats, to increase accessibility.

The final indicator, which evaluates the confidence in applying RA 11332 in daily work (mean = 4.31, SD = 0.87), indicates that employees generally feel well-prepared to implement the law's provisions. This aligns with Salvana et al. (2021), who stressed integrating digital surveillance tools and continuous training to improve readiness during disease outbreaks. However, the observed variability (SD = 0.87) suggests that some employees may need additional hands-on experience or support to implement disease surveillance protocols fully. Offering practical training, simulations, or mentorship programs could help build confidence and ensure employees can effectively carry out disease reporting duties.

In conclusion, the high implementation score (mean = 4.30, SD = 0.74) suggests that efforts to raise awareness and provide training for RA 11332 have been largely successful, reflecting the law's positive role in enhancing public health surveillance. However, the variability in responses points to areas that need attention, such as ensuring consistent training, increasing accessibility to materials, and integrating more hands-on practice in the workplace. Literature from Cabrera and Uy (2020) and Mendoza and Barrameda (2021) highlights that addressing these issues through continuous training, digital innovations, and clearer communication can help overcome the challenges identified in RA 11332's implementation. By focusing on these areas, the law's application can be more effectively carried out, equipping all stakeholders to respond promptly and accurately to public health threats.

Table 4. Extent of Implementation in Terms of Reporting Infrastructure

<u>Indicator</u>	<u>M</u>	<u>SD</u>	<u>Verbal Interpretation</u>
1. Our facility has sufficient access to the internet and computers for reporting.	4.14	0.90	High Level
2. The electronic reporting system (e.g., DOH platform) works efficiently.	4.07	1.00	High Level
3. Our staff are well-trained in using the reporting system.	4.33	0.72	Very High Level
4. We have enough personnel to comply with RA 11332.	4.00	1.01	High Level
5. There are sufficient financial and operational resources for public health surveillance.	3.64	1.12	High Level
Overall for Reporting Infrastructure	4.04	0.80	High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the extent of implementation regarding reporting infrastructure among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

The results from Table 4, which evaluate the extent of implementation of reporting infrastructure in a healthcare facility, indicate a high level of implementation overall ($M = 4.04$, $SD = 0.80$).

The highest-rated indicator, staff training in using the reporting system ($M = 4.33$, $SD = 0.72$), reflects the facility's success in building human resource capacity. This resonates with findings by Pamaos and Labao (2019), who emphasized that frontline healthcare workers must have the skills to fulfill disease notification responsibilities under RA 11332. Albuero (2021) also supports this, stating that the effectiveness of the Act depends significantly on the training and preparedness of personnel managing surveillance and response systems. The consistency in responses further affirms the implementation of structured training programs, a practice advocated by Cabrera and Uy (2020), who stressed that continuous capacity-building is vital in improving the accuracy and timeliness of notifiable disease reporting.

In terms of technological infrastructure, the high mean score for access to internet and computers ($M = 4.14$, $SD = 0.90$) supports the assertion by Garcia and Santos (2022) that the integration of digital tools, such as the DOH's electronic disease reporting platforms, is essential for streamlining surveillance operations. However, the variability in responses suggests that not all areas within the facility may have equal access to technological resources. This mirrors the findings of Mendoza and Barrameda (2021), who pointed out that technological inequities between urban and rural health units hinder consistent implementation of RA 11332, particularly in less digitally equipped regions. The current data, therefore, affirm the need to standardize technological access across all units, as also echoed in Nicolas and De Vega (2019), who found that gaps in infrastructure contribute to underreporting and delayed case detection.

The efficiency of the electronic reporting system ($M = 4.07$, $SD = 1.00$) reveals a functional platform but with notable inconsistencies. This supports the findings of Cabrera and Uy (2020), who documented how some health workers experienced delays and system errors when using electronic platforms such as the Epidemiology Bureau's DataCollect tool. As such, the current study reinforces the call for technical refinements, user feedback loops, and performance monitoring to ensure system reliability, especially critical in emergencies covered by RA 11332.

Regarding personnel adequacy ($M = 4.00$, $SD = 1.01$), the results suggest general satisfaction with staffing levels, albeit with some departments feeling the strain of insufficient human resources. This confirms the assertion of Del Rosario and Manalili (2023), who argued that even with clear legal mandates, implementation can falter if the health system is understaffed or lacks surge capacity during public health crises. Albuero (2021) similarly noted that during the height of the COVID-19 pandemic, many local facilities struggled to meet reporting deadlines due to personnel shortages, despite increased caseloads and reporting demands under RA 11332. This suggests a need for strategic human resource planning, particularly in anticipation of future public health emergencies.

The lowest-rated indicator, financial and operational resource availability ($M = 3.64$, $SD = 1.12$), highlights a recurring concern in the literature. Nicolas and De Vega (2019) emphasized that insufficient funding remains a major barrier to effective disease surveillance and reporting. They noted that RA 11332 implementation is often hampered by poor budget allocation, inconsistent logistical support, and an overreliance on temporary or external funding sources. This is echoed in the current study's finding that access to resources is uneven across units, which may limit the consistent application of the Act's provisions. Furthermore, Garcia and Santos (2022) called for institutionalizing financial support for surveillance systems as a core part of healthcare governance, not just a response to epidemics. Addressing this will require long-term planning, government commitment, and integration of public health surveillance into routine budget cycles.

Despite these challenges, the overall high implementation score ($M = 4.04$) suggests that the facility has laid a strong foundation for fulfilling its obligations under RA 11332. This finding aligns with the broader literature's recognition that while legal mandates provide direction, their effectiveness depends on system-

wide readiness, encompassing trained personnel, robust infrastructure, reliable funding, and adaptive technologies (Pamaos & Labao, 2019; Alburo, 2021).

Finally, the variable responses across indicators underscore the need for adaptive, equity-focused approaches to implementation—an issue also raised in the global comparisons of disease reporting systems. International literature on the International Health Regulations (IHR) framework, for example, shows that sustainable surveillance systems must be supported by consistent national strategies, cross-sectoral collaboration, and transparent resource allocation—all areas where the Philippines, through RA 11332, is still building capacity.

Table 5. Extent of Implementation in Terms of Stakeholders Collaboration

<u>Indicator</u>	<i>M</i>	<i>SD</i>	<i>Verbal Interpretation</i>
1. Our facility is involved in the implementation of RA 11332.	4.52	0.74	Very High Level
2. Our facility actively participates in meetings, coordination efforts, or training sessions related to RA 11332.	4.52	0.80	Very High Level
3. Our facility's communication and coordination efforts among stakeholders are sufficient.	4.29	0.86	Very High Level
4. Our facility does not experience delays in coordination among other stakeholders.	3.93	0.87	High Level
5. Our facility is involved in creating an inter-agency task force dedicated to RA 11332 enforcement.	4.19	0.71	High Level
Overall for Stakeholders Collaboration	4.29	0.69	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the extent of implementation in terms of stakeholder's collaboration among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

Table 5 provides an in-depth assessment of how stakeholders collaborate in enforcing Republic Act No. 11332. The overall high mean score ($M = 4.29$, $SD = 0.69$) reflects strong cooperative efforts among institutions, indicating that the law has been effectively implemented through multi-sectoral engagement. These findings support existing studies that stress the significance of collaborative networks in enhancing public health surveillance, especially within legal structures like RA 11332.

The first two indicators, each receiving a mean score of 4.52, reveal stakeholders' robust participation in implementing the law and engaging in organized activities such as meetings and training. These results are consistent with the work of Pamaos and Labao (2019), who stressed that the law's successful rollout largely depends on the active support of healthcare facilities and leadership involvement. Del Rosario and Manalili (2023) similarly emphasized that strong institutional collaboration contributes to a more agile and responsive health surveillance system, especially during public health emergencies. The relatively low standard deviations (0.74 and 0.80) indicate uniform involvement, pointing to a well-established collaborative environment across different healthcare units.

These findings are further reinforced by Cabrera and Uy (2020), who observed that sustained cooperation among agencies, alongside shared training initiatives, significantly improved disease reporting processes during the early phases of RA 11332's application. They noted that collaboration between health

facilities, local authorities, and public health organizations led to enhanced accuracy and faster reporting.

The third indicator, which evaluates how well stakeholders communicate and coordinate ($M = 4.29$, $SD = 0.86$), also scored positively but revealed more varied responses. This supports the conclusions of Garcia and Santos (2022), who noted that while communication structures between national and local stakeholders exist, they are not always consistent. In particular, disparities between urban and rural coordination often result in fragmented implementation. The findings suggest the need for enhanced communication platforms that ensure information is clear, timely, and accessible throughout the healthcare system.

Meanwhile, the fourth indicator, which addresses coordination delays ($M = 3.93$, $SD = 0.87$), points to an area that requires improvement. Nicolas and De Vega (2019) highlighted similar challenges, attributing delays to administrative hurdles, unclear reporting hierarchies, and inefficient real-time communication issues, especially in underserved or remote health settings. These delays reduce the system's responsiveness to outbreaks. To address this, streamlining communication procedures and improving localized decision-making, similar to international models, may strengthen coordination and timely reporting.

The fifth indicator, measuring participation in inter-agency task forces ($M = 4.19$, $SD = 0.71$), suggests that while many stakeholders are engaged through formal collaboration structures, some are still not fully integrated into such systems. Alburo (2021) emphasized the importance of structured inter-agency coordination, especially during the pandemic, in promoting unified public health action. Although informal cooperation remains valuable, formalizing partnerships through recognized task forces can improve accountability, ensure continuity, and bolster the legal authority behind surveillance and response activities.

These patterns also mirror international standards, particularly those outlined in the International Health Regulations (IHR). The World Health Organization (WHO) encourages countries to adopt integrated, multisectoral collaboration models, particularly within the "One Health" framework, which bridges human, animal, and environmental health systems. The Philippines' establishment of inter-agency collaborations under RA 11332 reflects this global alignment, though current findings and literature suggest that further institutionalization is necessary to enhance effectiveness.

In summary, the consistently high scores for stakeholder engagement, training involvement, and inter-organizational communication affirm that collaboration is a core factor in successfully implementing public health policies like RA 11332. However, the identified gaps—such as coordination delays and partial task force participation—suggest areas where targeted improvements can be made. As noted by Garcia and Santos (2022) and Cabrera and Uy (2020), building lasting collaborative frameworks requires strong partnerships, sustained funding, digital tools, and clear governance structures to ensure seamless execution of the law's mandates.

Table 6. Extent of Implementation in Terms of Resource Availability

Indicator	M	SD	Verbal Interpretation
1. Do you know the available resources allocated for RA 11332 implementation in your facility?	4.21	0.81	High Level
2. Our facility receives sufficient government funding for disease surveillance and reporting.	3.93	1.00	High Level
3. Our facility has enough personnel dedicated to disease surveillance and reporting.	4.05	0.96	High Level
4. Our facility has adequate medical supplies for disease surveillance (e.g., diagnostic tools, testing kits, laboratory equipment).	3.64	1.06	High Level
5. Our Facility has reliable internet and technology infrastructure for timely disease reporting in your facility.	3.95	0.88	High Level
Overall, for Resource Availability	3.96	0.78	High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00=Very High Level (VH), 3.41–4.20=High Level (H), 2.61–3.40=Moderate Level (M), 1.81–2.60=Low Level (L), 1.00–1.80=Very Low Level (VL).

Table 6 presents the extent of implementation in terms of resource availability among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

The findings from Table 6 illustrate that the facility generally possesses a high level of resources necessary for implementing Republic Act No. 11332 (RA 11332). The overall average rating of 3.96 indicates a positive perception of available resources, though some variability across specific indicators reveals ongoing challenges consistent with national and global observations.

A notably strong score was observed in staff awareness regarding the resources available for RA 11332 implementation, with a mean of 4.21. This suggests that most personnel know the tools and support structures in place. This observation supports the work of Thacker and Berkelman (1988), who emphasized the importance of having resources and ensuring healthcare workers are aware of and able to utilize them effectively. However, the moderate standard deviation ($SD = 0.81$) implies some inconsistencies in this awareness, reflecting the communication gaps identified by Mendoza and Barrameda (2021), where fragmented information flow can limit the full utilization of surveillance resources.

Regarding financial resources, respondents gave an average score of 3.93, indicating general satisfaction with available funding for surveillance activities. However, the relatively high SD of 1.00 highlights differences in perception, possibly due to unequal distribution of funds within or between departments. This mirrors the findings of Tanaka et al. (2021), who noted that low- and middle-income countries (LMICs) like the Philippines often struggle with inconsistent financial support due to limited budgets and competing healthcare demands.

The human resources indicator—specifically the presence of personnel assigned to disease surveillance—received a high mean rating of 4.05. This underscores the importance of staffing in ensuring timely and accurate disease reporting, as emphasized by Jayatileke (2020). However, the response variation ($SD = 0.96$) suggests uneven staffing levels or disparities in training and deployment, aligning with national-level concerns noted by Garcia et al. (2023) regarding the need for continuous capacity-building and decentralized human resource strategies.

When examining the availability of essential medical supplies like diagnostic kits and testing tools, the average score of 3.64 falls at the lower end of the high range. This is coupled with a standard deviation of 1.06, indicating substantial variation in perception. These findings suggest gaps in supply chain logistics, echoing Lopez and Cruz (2021), who observed that rural and underserved regions often encounter periodic shortages that can undermine timely outbreak detection and response.

Technological infrastructure within the facility, particularly regarding internet access and digital reporting tools, received an overall favorable rating of 3.95. This supports earlier findings by Lopez and Dizon (2021), who advocated for strengthening digital platforms to facilitate real-time disease reporting and ease administrative workloads. Nonetheless, a standard deviation of 0.88 points to varying levels of access or reliability among staff, consistent with broader issues in LMICs, as described in BMC Public Health (2019).

Internationally, digital tools have revolutionized how countries manage disease surveillance. Nations such as South Korea and Thailand have successfully implemented real-time, integrated digital reporting systems to detect outbreaks more efficiently (Chen et al., 2020; Jao et al., 2021). Infrastructure and system compatibility challenges remain, while the Philippines has progressed through platforms like PIDSR. This is echoed in the research by Tan and Robles (2022) and Mendoza and Delos Santos (2023), who identified ongoing barriers to seamless technology use in surveillance activities.

In summary, the facility exhibits a strong foundation for enforcing RA 11332, with high levels of awareness, staffing, and technological capability. However, consistent with national trends and academic literature, issues such as inconsistent funding, logistical supply challenges, and unequal access to digital infrastructure persist. Addressing these through targeted investments, training, and coordination can significantly strengthen compliance with RA 11332 and the broader national capacity for public health response in alignment with international best practices.

3.2. Overall Level of Effectiveness of RA 11332 among Health Professionals.

Table 7. Level of Effectiveness in Terms of Reporting Compliance

<u>Indicator</u>	<u>M</u>	<u>SD</u>	<u>Verbal Interpretation</u>
1. Our facility often submits reports on notifiable diseases to the appropriate authorities.	4.45	0.74	Very High Level
2. I know the mandatory disease reporting requirements under RA 11332.	4.64	0.53	Very High Level
3. I have received formal training on reporting compliance under RA 11332.	3.98	1.05	High Level
4. I know the specific notifiable diseases that must be reported.	4.29	0.81	Very High Level
5. We usually receive information or updates regarding disease reporting requirements? (e.g., DOH, workplace training, online resources, etc.	4.26	0.94	Very High Level
Overall for Reporting Compliance	4.32	0.66	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5:00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the effectiveness level in reporting compliance among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

The data presented in Table 7 reveals that the overall effectiveness of reporting compliance for notifiable diseases is considered at a Very High Level, with a mean score of 4.32 and a standard deviation of 0.66. This suggests strong adherence to the reporting requirements across the facility, with only minor response variations. These findings align with literature suggesting that effective reporting systems are crucial for timely and accurate disease surveillance, and that high compliance rates contribute significantly to public health preparedness (Garcia et al., 2022).

The first indicator, which assesses how often the facility submits reports on notifiable diseases to the appropriate authorities, received a mean score of 4.45 with a standard deviation of 0.74, indicating a Very High Level of compliance. This suggests that the facility generally maintains a high frequency of submitting reports, reflecting the operational robustness of the disease reporting system. According to Tanaka et al. (2021), regular and timely reporting is essential for mitigating outbreaks, as delays in notification can significantly hinder response efforts. The moderate standard deviation, however, suggests that while most departments exhibit high compliance, there may still be slight inconsistencies in the reporting frequency. This variability resonates with PLOS ONE (2017), which pointed out that institutions' fragmented communication channels can lead to irregular reporting practices, especially in facilities with diverse departments.

The second indicator, which evaluates awareness of mandatory disease reporting under RA 11332, achieved an exceptionally high mean score of 4.64, with a low standard deviation of 0.53. This indicates that respondents are well-informed about their legal obligations related to disease reporting, and the narrow spread

of responses highlights the consistent dissemination of information regarding RA 11332 across the facility. According to Lopez & Cruz (2021), widespread awareness of legal frameworks like RA 11332 is foundational to successful disease surveillance systems. A well-informed workforce ensures that reporting protocols are followed, reducing the risk of underreporting or delays. These findings are consistent with global research by Talisuna et al. (2020), which noted that high levels of awareness correlate strongly with better reporting outcomes in national health systems.

The third indicator, measuring receipt of formal training on reporting compliance under RA 11332, scored a mean of 3.98, with a standard deviation of 1.05, placing it within the "High Level" category. While this suggests that formal training is prevalent, the higher standard deviation indicates some inconsistency in training provision, which could indicate variations in training coverage or attendance. Jayatilleke (2020) highlights that consistent, comprehensive training is crucial for building workforce capacity in disease reporting and surveillance. Inconsistent training, particularly in lower-resourced settings, may lead to gaps in knowledge or understanding of reporting protocols. In the context of RA 11332, ensuring equitable access to training for all healthcare staff is critical to achieving uniform compliance across facilities.

The fourth indicator, which evaluates familiarity with the specific notifiable diseases that must be reported, yielded a mean score of 4.29, with a standard deviation of 0.81. This result indicates that most respondents are highly knowledgeable about the diseases subject to mandatory reporting. However, the moderate standard deviation suggests that some individuals may benefit from additional clarification or updates. This aligns with Garcia et al. (2023), who observed that maintaining up-to-date knowledge on disease definitions and case criteria is critical for accurate and timely reporting. Continuous education on emerging notifiable diseases is essential for effective surveillance as disease patterns evolve. This also echoes the importance of standardized case definitions and reporting procedures, as noted by BMC Public Health (2019), to minimize discrepancies in reporting.

The fifth indicator, which assesses the frequency with which employees receive updates regarding disease reporting requirements, scored a mean of 4.26, with a standard deviation of 0.94. While this falls into the Very High Level category, the wider standard deviation implies that some employees may not be as regularly informed about updates. This could reflect challenges in ensuring that communication channels are uniformly effective across the facility. Mendoza and Delos Santos (2023) argue that regular updates and refresher training are necessary to ensure ongoing compliance, particularly during public health emergencies. The variation observed in the responses suggests that there may be opportunities for improving the consistency and frequency of communication, ensuring that all personnel are equally well-informed about any changes to reporting protocols.

In summary, the data reveal a generally high level of effectiveness in reporting compliance, with notable strengths in awareness and familiarity with disease reporting requirements. These findings align with global studies that stress the importance of widespread awareness, consistent training, and effective communication for achieving high compliance in disease reporting (Santos, 2020; Lee et al., 2020). However, areas such as training coverage and updates' regularity highlight improvement opportunities. Addressing these gaps will further enhance reporting compliance, ensuring that the facility remains well-equipped to meet the legal obligations under RA 11332 and contribute to the timely detection and response to public health threats.

Table 8. Level of Effectiveness in Terms of Timeliness of Report

Indicator	M	SD	Verbal Interpretation
1. I know the timeframe for reporting notifiable diseases under RA 11332.	4.48	0.77	Very High Level
2. I often report notifiable diseases within the required timeframe.	4.43	0.67	Very High Level
3. I encountered delays in reporting a notifiable disease.	3.76	1.03	High Level
4. Our current reporting system allows for timely and efficient disease reporting.	4.31	0.78	Very High Level
5. Our facility submits reports on notifiable diseases promptly.	4.43	0.83	Very High Level
Overall, for the Timeliness of the Report	4.28	0.63	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the level of effectiveness in terms of reporting timeliness of reports among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

According to the data presented in Table 8, respondents rated the timeliness of reporting at a *Very High* level (mean = 4.28; SD = 0.63), indicating that most facilities comply with reporting schedules as mandated by the law. This supports the conclusions of Buehler et al. (2008), who highlighted that swift reporting—especially when supported by digital systems—is key to enabling effective public health interventions. High average scores for both the consistency of timely submissions (M = 4.43; SD = 0.67) and meeting regulatory deadlines (M = 4.43; SD = 0.83) suggest that current reporting practices align well with the standards established by RA 11332.

In addition, the elevated mean score regarding awareness of required reporting deadlines (M = 4.48; SD = 0.77) reflects a well-informed workforce with a clear understanding of their legal responsibilities. This observation echoes the arguments of Gostin et al. (2020), who emphasized the role of legal awareness in enhancing compliance with the International Health Regulations (IHR) and expediting emergency responses. The ability of health workers to act quickly and within legal parameters remains a cornerstone of national and global disease surveillance efforts.

Nonetheless, despite these generally favorable results, one indicator revealed a potential weakness: the occurrence of delays in reporting, which received a lower mean score of 3.76 (SD = 1.03). Although still classified as *High*, this score displayed the greatest variability among all indicators. Such inconsistencies suggest that, while timely reporting is often achieved, some facilities still encounter delays. These irregularities may be attributed to limitations in infrastructure, inconsistent staff training, or inefficiencies in internal communication—challenges also identified by Talisuna et al. (2020) and Tan and Robles (2022) in the context of disease surveillance systems in low-resource environments.

These findings are consistent with global trends, where even countries with robust health systems experienced difficulties meeting IHR reporting requirements during the COVID-19 crisis (Kamradt-Scott et

al., 2021). In the Philippine setting, the delays observed may point to ongoing operational hurdles, such as inconsistent digital infrastructure or limited capacity for real-time data exchange. Similar concerns have been raised in evaluations of surveillance platforms like the Philippine Integrated Disease Surveillance and Response (PIDSRS) system and COVIDKaya (Aguirre et al., 2021).

To mitigate these challenges, it is crucial to implement ongoing enhancements to reporting systems, including expanding digital capabilities, unifying reporting protocols across departments, and improving internal communication structures. Mehrotra et al. (2021) recommend integrating real-time electronic reporting tools into national health systems as a strategy to reduce reporting delays and improve data reliability—an approach that could significantly boost the effectiveness of the Philippine disease reporting framework under RA 11332.

In conclusion, while the reporting system currently demonstrates strong timeliness performance, occasional delays indicate a need for focused improvements. Addressing these gaps will help strengthen national compliance with RA 11332 and promote better alignment with international standards such as those established by the IHR.

Table 9. Level of Effectiveness in Terms of Data Accuracy

<u>Indicator</u>	<i>M</i>	<i>SD</i>	<i>Verbal Interpretation</i>
1. I know the importance of data accuracy in disease reporting.	4.64	0.76	Very High Level
2. I am confident in my ability to report notifiable diseases accurately.	4.40	0.80	Very High Level
3. I often verify data accuracy before submitting a disease report.	4.40	0.83	Very High Level
4. I often encounter errors in the reports submitted to health authorities.	3.33	1.24	Moderate Level
5. I often feel pressured to submit reports quickly, which affects data accuracy.	3.52	1.38	High Level
Overall for Data Accuracy	4.06	0.78	High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the level of effectiveness in terms of data accuracy among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

Reliable data reporting forms the backbone of effective disease surveillance and supports informed public health strategies. As indicated in Table 9, respondents generally demonstrated a *high level of effectiveness in ensuring data accuracy*, which is reflected in a composite mean score of 4.06 (SD = 0.78). This supports global research findings emphasizing that accurate and verifiable data is crucial for timely responses to emerging health threats (Buehler et al., 2008; Mehrotra et al., 2021).

The most prominent indicator in this domain was the respondents' recognition of the importance of data precision (M = 4.64; SD = 0.76), which suggests strong awareness of how essential reliable data is in tracking and managing disease outbreaks. This observation aligns with global directives such as the International Health Regulations (IHR, 2005), which require nations to deliver timely and accurate updates on

potential public health emergencies (World Health Organization, 2005). The Philippines echoes these standards at the national level through Republic Act No. 11332, which mandates truthful and complete reporting of notifiable diseases.

Additionally, the high scores related to confidence in accurate reporting and frequent data validation prior to submission (with means of 4.40; SD = 0.80 and 0.83, respectively) indicate robust internal practices to ensure data quality. Such practices are essential in minimizing manual reporting errors, an area where digital systems and electronic health records (EHRs) have demonstrated significant advantages. Scholars like Buehler et al. (2008) and Mehrotra et al. (2021) argue that integrating automated reporting mechanisms into national surveillance systems enhances accuracy and reliability, particularly during health emergencies when timely decisions are critical.

Despite these positive findings, two areas warrant attention. First, the frequency of reporting errors submitted to health authorities was rated Moderate ($M = 3.33$; $SD = 1.24$), highlighting significant inconsistencies among respondents. Such variation could result from differences in training levels, organizational workflows, or available resources—a challenge observed locally and internationally, as noted by Talisuna et al. (2020). Research from low- and middle-income countries (LMICs) using systems like DHIS2 also found that digital system success largely depended on localized adaptation and continuous training efforts (Jao et al., 2021).

Second, the influence of time pressure on data accuracy received a *high rating* ($M = 3.52$; $SD = 1.38$), *but it* also showed the greatest variability across responses. This suggests that while some health workers uphold data integrity under tight deadlines, others experience difficulties, potentially affecting the reliability of reports. This issue has also been highlighted by Morley et al. (2020), who cautioned that the efficiency of digital systems must not compromise data accuracy or ethical standards. In the Philippine setting, this concern was evident during the COVID-19 crisis, where platforms such as COVIDKaya and FASSSTER experienced setbacks due to system interoperability issues and delays in data transmission (Aguirre et al., 2021; DOH, 2021).

These findings highlight the need to reinforce validation protocols and improve reporting workflows to reduce the negative effects of operational time constraints. Ravi et al. (2020) argue that digital surveillance tools should prioritize speed, data integrity, ethical use, and inclusiveness. Ensuring that such tools are embedded in a transparent and well-managed framework, as envisioned by RA 11332, requires consistent staff training, regular system assessments, and feedback mechanisms to support healthcare workers in maintaining high reporting standards, even under pressure.

To conclude, although current practices under RA 11332 reflect strong awareness, frequent data verification, and reporting confidence, the persistence of reporting errors and pressure-induced challenges points to areas for improvement. Strengthening digital infrastructure and human capacity will be crucial to consistently and accurately reporting notifiable diseases in the Philippines.

Table 10. Level of Effectiveness in Terms of Public Health Outcomes

<u>Indicator</u>	<u>M</u>	<u>SD</u>	<u>Verbal Interpretation</u>
1. I know the public health outcomes related to RA 11332 implementation.	4.38	0.79	Very High Level
2. I believe RA 11332 has helped improve public health outcomes in your area.	4.38	0.85	Very High Level
3. I noticed improved public health policies and interventions since the enforcement of RA 11332.	4.33	0.87	Very High Level
4. I believe that the effectiveness of RA 11332 has been in reducing the spread of notifiable diseases.	4.43	0.83	Very High Level
5. I have observed changes in public behavior related to health reporting and disease prevention.	4.40	0.80	Very High Level
Overall for Public Health Outcomes	4.39	0.76	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the level of effectiveness in terms of public health outcomes among health professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

The data presented in Table 10 reflect a strong perception among respondents regarding the significant effectiveness of Republic Act No. 11332 in enhancing public health outcomes, with a composite mean of 4.39 (SD = 0.76). This result indicates broad confidence in the law's implementation, particularly in its impact on disease prevention, improving the responsiveness of health systems, and promoting community participation in surveillance efforts.

The indicator with the highest rating was the belief in the law's success in curbing the spread of notifiable diseases (M = 4.43; SD = 0.83). This finding supports the primary aim of RA 11332, which is to ensure prompt and accurate disease reporting that enables swift public health responses and containment measures. This aligns with research by Buehler et al. (2008) and Ravi et al. (2020), who emphasize that effective legal frameworks are crucial in controlling disease outbreaks and reducing their spread.

Respondents also expressed strong awareness regarding the public health improvements associated with RA 11332 (M = 4.38; SD = 0.79) and the law's role in enhancing health policy (M = 4.33; SD = 0.87), both rated Very High. These perceptions are consistent with research on how disease surveillance laws can shape adaptive public health policies. The World Health Organization (2005) and Talisuna et al. (2020) highlight the need for legal frameworks to be flexible in response to evolving public health challenges, with governance structures that can directly influence policy reform. In the Philippines, RA 11332 has been instrumental in establishing surveillance systems like Event-Based Surveillance and Response (ESR) and digital platforms such as FASSSTER and COVIDKaya during the COVID-19 crisis (Aguirre et al., 2021; DOH, 2021).

The indicator reflecting the law's positive influence on public behavior (M = 4.40; SD = 0.80) is particularly noteworthy. It signals a growing culture of compliance and awareness among both citizens and health workers. This is likely due to ongoing public education efforts and mandatory reporting regulations. Mehrotra et al. (2021) found that clear legal requirements and robust communication efforts are essential in

shaping health-seeking behaviors and fostering community vigilance.

Furthermore, respondents rated the law's impact on improving public health in their local communities ($M = 4.38$; $SD = 0.85$) as Very High, further suggesting that RA 11332 has made positive contributions at the community level. This mirrors global trends where national laws, when effectively operationalized through decentralized health systems, lead to enhanced surveillance and quicker outbreak containment (Jao et al., 2021; WHO, 2020).

The consistently high ratings, coupled with relatively low standard deviations, reflect strong agreement among respondents regarding the law's positive effects. This consistency suggests that the law's enforcement has been effective and that functional systems are in place to support its implementation. However, as Morley et al. (2020) noted, the success of laws like RA 11332 depends on ongoing investments in human resources, technological infrastructure, and transparent governance.

In summary, the findings reinforce the view that RA 11332 plays a key role in disease prevention and public health protection in the Philippines. Its implementation appears to be achieving significant outcomes in reducing disease transmission, enhancing public compliance, and strengthening health governance. Moving forward, continued public health improvements will require not only the maintenance of legal mandates but also ongoing innovations in digital technology, greater community involvement, and alignment with international frameworks such as the International Health Regulations (2005)

Table 11. Level of Effectiveness in Terms of System Sustainability

<u>Indicator</u>	<i>M</i>	<i>SD</i>	<i>Verbal Interpretation</i>
1. I am aware of the sustainability efforts related to the implementation of RA 11332.	4.38	0.82	Very High Level
2. It is important for the sustainability of a system in disease reporting and response.	4.40	0.83	Very High Level
3. Our facility has an effective disease surveillance system to ensure sustainability.	4.36	0.69	Very High Level
4. The current disease reporting system under RA 11332 can be sustained long-term.	4.33	0.85	Very High Level
5. I believe that local communities contribute to the sustainability of the RA 11332 system.	4.31	0.90	Very High Level
Overall for System Sustainability	4.36	0.74	Very High Level

Note. V.I.=Verbal interpretation. The mean is interpreted as follows: 4.21–5.00 = Very High Level (VH), 3.41–4.20 = High Level (H), 2.61–3.40 = Moderate Level (M), 1.81–2.60 = Low Level (L), 1.00–1.80 = Very Low Level (VL).

The table presents the level of effectiveness in terms of system sustainability among health

professionals. The results are categorized based on mean scores, standard deviation, and verbal interpretation.

The results in Table 11 highlight a strong belief in the long-term viability of the disease surveillance system under Republic Act No. 11332 (RA 11332), with a mean score of 4.36 (SD = 0.74). This suggests that most respondents perceive the system as robust and capable of maintaining its functionality over time, consistent with the broader public health framework discussed by Gostin et al. (2020). They emphasize that when supported by solid legal frameworks, effective surveillance systems are essential for ensuring long-term public health security. The relatively low standard deviation (0.69) further indicates a broad consensus among respondents, reflecting strong confidence in the system's future effectiveness.

The mean score of 4.40 for the importance of sustainability in disease reporting and response reinforces the idea that a responsive and functional surveillance system is vital for public health. This aligns with Talisuna et al. (2020), who stress that the sustainability of disease surveillance systems depends not only on technological infrastructure but also on ongoing investments in health systems and human resources. For RA 11332 to remain sustainable, the system must adapt to emerging health challenges, requiring continuous updates to legal frameworks and operational processes.

Likewise, the mean score of 4.33 for the perceived long-term sustainability of the disease reporting system suggests optimism about the system's endurance. This aligns with global best practices, where digital innovations, such as integrating platforms like the Philippine Integrated Disease Surveillance and Response (PIDSR) system (Aguirre et al., 2021), have been shown to enhance reporting capacity and system resilience. However, the higher standard deviation (0.85) reflects some variation in individual perspectives on the system's long-term success, likely due to differences in local infrastructure or resource allocation, similar to the challenges faced by countries with varying public health capacities (Kamradt-Scott et al., 2021).

The focus on community participation (mean score of 4.31) is consistent with the findings of Lee et al. (2020), who argue that local communities are critical to the success and sustainability of health interventions. Their research underscores the importance of community involvement in disease surveillance, especially in low- and middle-income countries (LMICs), where resource constraints often hinder centralized enforcement. In the Philippines, RA 11332's success hinges on the collaboration between government agencies and local health authorities, emphasizing the need for intersectoral coordination and community mobilization, as Chen et al. (2021) highlighted in their study of South Korea's COVID-19 response.

Finally, these findings align with global recommendations for improving health system interoperability, training, and capacity building to ensure sustainability, as Jao et al. (2021) and Ravi et al. (2020) suggested. The Philippine government's integration of digital surveillance platforms like FASSSTER and COVIDKaya reflects the country's commitment to leveraging innovative solutions to enhance long-term system sustainability. However, challenges such as interoperability and data accuracy (as discussed in earlier results on timeliness and data quality) must be addressed to maximize the effectiveness of these systems.

In conclusion, the strong agreement regarding the sustainability of the disease surveillance system under RA 11332 indicates a well-supported framework, driven by effective legal implementation, community involvement, and the adoption of digital tools. While there are variations in individual perceptions, the overall confidence in the system's sustainability points to a positive outlook for disease surveillance in the Philippines. These findings emphasize the need for continued investments in infrastructure, training, and community collaboration to ensure the long-term effectiveness of disease surveillance systems, in alignment with global standards and innovations.

3.3. Correlation Between Extent of Implementation and Effectiveness

Table 12. Correlation Between the Extent of Implementation and the Level of Effectiveness

Extent of Implementation variable	Level of Effectiveness variable				
	Reporting Compliance	Timeliness of Report	Data Accuracy	Public Health Outcomes	System Sustainability
Policy Enforcement	.765*** High corr. <.001	.745*** High corr. <.001	.612*** Moderate corr. <.001	.691*** Moderate corr. <.001	.692*** Moderate corr. <.001
Awareness and Training	.778*** High corr. <.001	.712*** High corr. <.001	.662*** Moderate corr. <.001	.801*** High corr. <.001	.697*** High corr. <.001
Reporting Infrastructure	.673*** Moderate corr. <.001	.675*** Moderate corr. <.001	.472** Moderate corr. .002	.596*** Moderate corr. <.001	.582*** Moderate corr. <.001
Stakeholders Collaboration	.848*** High corr. <.001	.822*** High corr. <.001	.693*** Moderate corr. <.001	.769*** High corr. <.001	.735*** High corr. <.001
Resource Availability	.656*** Moderate corr. <.001	.717*** High corr. <.001	.611*** Moderate corr. <.001	.599*** Moderate corr. <.001	.630*** Moderate corr. <.001
<p><i>Note.</i> Cells contain correlation statistics, interpretations of their strengths, and corresponding p-values. Degree of freedom is 40. ***$p < .001$.</p>					

The table examines the correlation between various "Extent of Implementation" variables (Policy Enforcement, Awareness and Training, Reporting Infrastructure, Stakeholders Collaboration, and Resource Availability) and several "Level of Effectiveness" variables (Reporting Compliance, Timeliness of Report, Data Accuracy, Public Health Outcomes, and System Sustainability). The correlation coefficients represent the strength and direction of the relationship between each pair of variables.

Additionally, each correlation is described as having high or moderate strength based on the value of the correlation coefficient.

The results of the correlation analysis reveal strong and statistically significant relationships between implementation factors and key effectiveness indicators in the disease reporting system under Republic Act No. 11332. Among the implementation variables, Policy Enforcement showed a strong positive correlation with Reporting Compliance ($r = 0.765$, $p < .001$) and Timeliness of Report ($r = 0.745$, $p < .001$), indicating that stronger enforcement mechanisms are highly effective in promoting adherence to mandatory reporting protocols and ensuring that reports are submitted on time. This is likely because when clear policies are in place and, more importantly, when these are enforced with consistency and accountability in health institutions, personnel are more compelled to meet compliance standards. Policy Enforcement also demonstrated moderate correlations with Data Accuracy ($r = 0.612$, $p < .001$), Public Health Outcomes ($r =$

0.691, $p < .001$), and System Sustainability ($r = 0.692$, $p < .001$). These relationships suggest that while policy can encourage compliance and timeliness, its direct influence on data quality and long-term system durability may require complementary efforts, such as training, monitoring, and stakeholder support.

Meanwhile, Awareness and Training emerged as a particularly strong predictor of system effectiveness, exhibiting high correlations with Reporting Compliance ($r = 0.778$, $p < .001$) and Timeliness of Report ($r = 0.712$, $p < .001$), as well as an exceptionally strong correlation with Public Health Outcomes ($r = 0.801$, $p < .001$). These results highlight the critical role that education and capacity-building play in empowering health workers and frontline staff to fulfill their reporting duties effectively. Well-informed personnel are more likely to understand the importance of timely and accurate data, follow proper reporting procedures, and contribute meaningfully to disease surveillance and control efforts. Additionally, Awareness and Training showed moderate to high correlations with Data Accuracy ($r = 0.662$, $p < .001$) and System Sustainability ($r = 0.697$, $p < .001$), indicating that continuous professional development contributes not only to immediate performance outcomes but also to the long-term stability and reliability of the reporting system.

Among all variables, Stakeholders Collaboration was the most consistently influential factor, with high correlations across almost all effectiveness indicators. It was strongly associated with Reporting Compliance ($r = 0.848$, $p < .001$) and Timeliness of Report ($r = 0.822$, $p < .001$), and also demonstrated robust correlations with Public Health Outcomes ($r = 0.769$, $p < .001$) and System Sustainability ($r = 0.735$, $p < .001$). These findings underscore the importance of fostering collaborative relationships among various actors in the health system, including local health units, hospitals, laboratories, local government officials, and national health agencies. When these stakeholders collaborate, share information, and align their goals, the reporting process becomes more efficient and coordinated. This collaboration facilitates timely and complete data submission and enables a more effective and unified response to public health threats. Moreover, strong stakeholder engagement ensures the system remains functional and adaptive over time, particularly during public health emergencies.

In contrast, Reporting Infrastructure showed moderate correlations with Reporting Compliance ($r = 0.673$, $p < .001$), Timeliness of Report ($r = 0.675$, $p < .001$), and Public Health Outcomes ($r = 0.596$, $p < .001$), indicating that the presence of digital tools and systems does facilitate basic reporting functions. However, its relatively lower correlation with Data Accuracy ($r = 0.472$, $p = .002$) suggests that while technology enables faster and more organized data collection, it does not automatically guarantee the correctness of the information being reported. Data accuracy depends more heavily on human factors such as proper training, supervision, and understanding of reporting protocols. Similarly, infrastructure alone may not be sufficient to drive improved health outcomes unless accompanied by coordinated action and informed decision-making.

Lastly, Resource Availability demonstrated moderate correlations across all indicators, with the highest being Timeliness of Report ($r = 0.717$, $p < .001$). This finding implies that when adequate financial, human, and logistical resources are available, health facilities are more capable of submitting timely reports. However, its correlations with Data Accuracy ($r = 0.611$, $p < .001$) and Public Health Outcomes ($r = 0.599$, $p < .001$), while still significant, were not as strong. This suggests that resources are a necessary but not sufficient condition for effectiveness. Without the guidance of policy, the clarity of training, or the support of collaboration, resources alone may not translate into accurate reporting or improved outcomes.

Overall, the analysis reveals that Policy Enforcement, Awareness and Training, and Stakeholders Collaboration are the most impactful factors in determining the effectiveness of the disease surveillance system. These variables directly influence compliance, timeliness, accuracy, and long-term sustainability. On the other hand, while Reporting Infrastructure and Resource Availability are essential for system operation, they appear to function more as enablers rather than drivers of effectiveness. Their success depends on their integration with strategic planning, training, and stakeholder coordination. The statistical significance of these relationships affirms that the extent and quality of implementation across these variables are critical in enhancing the performance of RA 11332 in the Philippine context.

4. Summary of Findings, Conclusion, and Recommendations

This chapter provides an overview of the conclusions drawn after presenting, evaluating, and interpreting the study's data and the suggestions made for additional research.

4.1. Summary of Findings

The salient findings of the study are the following:

The findings across various tables provide an in-depth analysis of the implementation of RA 11332, categorized by different groups such as age, education and years of experience.

Starting with age groups, the data shows that older age groups, particularly those between 31 and 50 years of age, consistently reported higher levels of policy enforcement, awareness, training, stakeholder collaboration, and resource availability. These groups demonstrated greater familiarity with RA 11332, more active involvement in its implementation, and better resource access, leading to Very High ratings across several indicators. In contrast, younger age groups (specifically those between 22 and 30) reported lower awareness, confidence, and resource availability, particularly regarding technology and personnel. Despite adequate familiarity and participation in RA 11332, younger groups faced gaps in their confidence in applying the law and perceived barriers to resource access, especially in technology and staffing. This highlights the need for targeted interventions to support younger professionals, particularly in enhancing training opportunities, increasing access to resources, and building confidence in applying RA 11332 provisions.

When the data was analyzed by educational attainment, both Bachelor's and Master's level professionals exhibited high levels of policy enforcement and awareness regarding RA 11332. Both groups reported Very High levels of compliance with reporting guidelines, ensuring timely submission of disease reports, and designating units for monitoring compliance. However, Master's degree holders generally reported slightly higher levels of infrastructure readiness, particularly regarding access to electronic reporting systems and internet resources. This suggests that Master's level professionals had better access to technological resources for reporting purposes. Despite these strengths, both educational groups reported challenges related to resource availability, specifically staffing and financial resources, which were seen as critical gaps that could hinder the effective implementation of RA 11332.

The findings across different facility types revealed that BHS (Barangay Health Stations) and PDOHO (Provincial Department of Health Offices) consistently rated highly in all dimensions of RA 11332 implementation. These facilities reported Very High levels of policy enforcement, awareness, training, and stakeholder collaboration, with the highest levels of resource availability, particularly regarding funding, personnel, and medical supplies. In contrast, hospitals and Rural Health Units (RHUs) demonstrated more variation. Hospitals showed moderate scores in adherence to reporting schedules and timely submission of reports, suggesting that operational efficiency and resource allocation challenges might be hindering their full compliance with RA 11332. Rural Health Units (RHUs), while showing generally high levels of awareness and stakeholder collaboration, faced notable difficulties in training and resource availability, particularly regarding medical supplies and technology infrastructure. The data suggests that while RA 11332 is being implemented effectively in many areas, hospitals and RHUs could benefit from additional resource allocation and infrastructure enhancement support to ensure more uniform implementation across facilities.

Regarding professional groups, public health, nursing, and allied health professionals all reported very high policy enforcement levels. These professionals strongly complied with RA 11332 guidelines, including timely and accurate reporting of notifiable diseases and the designation of units for monitoring. However, Public Health professionals consistently reported the highest levels of awareness and confidence in applying RA 11332 provisions, likely due to their direct involvement in disease prevention and

management. On the other hand, Nursing and Allied Health professionals reported slightly lower levels of training and confidence, suggesting potential gaps in their professional development or a need for more tailored training programs to build their capacity to apply the law effectively in daily practice. Public health professionals have the best access to technology and reporting systems regarding reporting infrastructure. In contrast, Nursing and Allied Health professionals faced greater challenges in terms of resource availability, particularly related to medical supplies, personnel, and funding. This disparity in resource availability underscores the need for more strategic investments in the Nursing and Allied Health sectors to ensure the successful implementation of RA 11332 across all professional groups.

Finally, the data categorized by years of experience revealed that professionals with 4-6 years of experience consistently reported the highest satisfaction with RA 11332 implementation, particularly in policy enforcement, training, reporting infrastructure, and stakeholder collaboration. These professionals showed a deep familiarity with the law and better access to the technology and resources needed for effective implementation. In contrast, those with less than 1 year of experience reported higher satisfaction with the availability of internet and computers for reporting, but showed lower confidence in reporting systems and staff training. Additionally, professionals with 1-3 years of experience reported resource allocation challenges, particularly in staffing and financial resources. The data highlights the importance of experience in improving the implementation of RA 11332, with more experienced professionals reporting higher satisfaction levels across most indicators. However, there is a clear need to address the gaps in training and resource availability for professionals with fewer years of experience to ensure consistent compliance across the workforce.

Overall, while the implementation of RA 11332 is strong in areas such as policy enforcement, awareness, and infrastructure, several challenges remain, particularly in resource availability, training, and stakeholder coordination. The data suggests that younger professionals with less experience and professionals in hospitals and RHUs face more significant challenges in these areas. Addressing these gaps, through targeted investments in training, resource allocation, and technological infrastructure, will be crucial in ensuring the uniform success of RA 11332's implementation across all sectors, age groups, educational levels, and professional fields.

The implementation of RA 11332 demonstrates a consistently high level of effectiveness across key indicators such as compliance, timeliness, data accuracy, public health outcomes, and system sustainability. In terms of compliance, all age groups exhibited strong adherence to reporting protocols, with the 41-50 age group showing the highest level of effectiveness. The 31-40 and 41-50 age groups also excelled in timeliness, consistently meeting required reporting timeframes, while the 22-30 age group reported more frequent delays. Regarding data accuracy, confidence was generally high across all age groups, though younger groups, particularly the 22-30 range, experienced more errors due to pressures for quicker reporting. Public health outcomes were positively perceived across all age groups, with the 41-50 group again rating the impact of RA 11332 most favorably. Regarding system sustainability, the 41-50 age group expressed the highest confidence in the long-term viability of disease reporting systems, while the 22-30 age group showed slightly lower support.

Grouped by education level, both Bachelor's and Master's level professionals demonstrated strong compliance, with Master's level respondents scoring higher across most indicators. These professionals also reported high timeliness and data accuracy, with Master's level individuals rating public health outcomes and system sustainability more positively. BHS and PDOHO facilities consistently rated highest in compliance, timeliness, data accuracy, and sustainability. Hospitals reported more moderate effectiveness, particularly in data accuracy and system sustainability. At the same time, Rural Health Units (RHUs) performed well in public health outcomes but faced challenges in training, timeliness, and data accuracy.

By profession, Allied Health, Nursing, and Public Health professionals all rated disease reporting highly, with Public Health professionals showing the greatest compliance and awareness. They also demonstrated higher confidence in data accuracy and rated public health outcomes most positively. However,

they rated system sustainability lower than nursing and allied health professionals. Regarding years of experience, those with over six years of experience rated all aspects more positively, particularly in timeliness, data accuracy, and system sustainability. Professionals with less than one year of experience tended to rate aspects more moderately, especially in data accuracy and timeliness.

In conclusion, RA 11332's implementation has proven highly effective across all indicators, with older professionals, those with more experience, and facilities like BHS and PDOHO showing particularly strong performance. While challenges remain, particularly for younger professionals, less experienced individuals, and some facility types, the overall impact on public health reporting is positive, with strong recognition of the law's role in improving disease reporting, public health outcomes, and system sustainability.

The findings from the tables reflect a generally high level of implementation across various areas related to the enforcement of RA 11332, focusing on policy, awareness and training, reporting infrastructure, stakeholder collaboration, and resource availability.

Regarding policy enforcement, the facility demonstrated high adherence to guidelines, consistent and accurate disease reporting, timely submissions, and strong compliance with RA 11332. A designated unit for monitoring compliance is in place, and the overall policy enforcement was rated very high.

Regarding awareness and training, the facility has a solid understanding of RA 11332's provisions, with staff being well-informed about its role in controlling infectious diseases. The overall level of awareness and training was high. However, there is room for improvement in training frequency, as indicated by the lower rating for providing sufficient training and information materials. The overall score for this category was considered high.

Regarding reporting infrastructure, the facility has adequate access to necessary technology and a functional electronic reporting system. However, there is some variability in the financial and operational resources for surveillance. The overall score was high, with particular strengths in staff training on the reporting system.

The stakeholders' collaboration section shows a strong commitment to coordination and communication among various stakeholders involved in enforcing RA 11332. The facility engages in collaborative efforts, including meetings and coordination activities. However, delays in stakeholder communication were noted in some instances. The overall collaboration rating was high.

Lastly, the facility scored high across all indicators in resource availability, including awareness of available resources, government funding for disease surveillance, personnel availability, and medical supplies. However, the adequacy of medical supplies for surveillance was slightly lower. The overall score for resource availability was 3.96, indicating a generally high level but with some areas that could benefit from further improvement.

In summary, the findings demonstrate that the facility is effectively implementing RA 11332 in terms of policy enforcement, awareness, reporting infrastructure, collaboration, and resource availability, with slight areas for improvement in training, resource allocation, and communication.

The findings from the tables indicate a very high level of effectiveness in key areas related to the implementation of RA 11332, which focuses on disease reporting and response. In reporting compliance, respondents demonstrated a very high level of effectiveness, with strong awareness of mandatory reporting requirements and frequent updates received about reporting obligations. However, formal training on reporting compliance showed a slightly lower score, indicating room for improvement.

The effectiveness of reports was also very high in terms of timeliness. Most respondents were aware of the required reporting timeframes and generally reported diseases within the prescribed timeframes, although some delays in reporting were still encountered. The current reporting system was perceived as timely and efficient, supporting the quick submission of reports.

For data accuracy, while respondents showed high awareness of its importance and confidence in their ability to report accurately, challenges were observed. Some errors were encountered in submitted

reports, and the pressure to submit reports quickly negatively impacted data accuracy, which may indicate areas where further attention could enhance overall data quality.

Regarding public health outcomes, respondents felt that RA 11332 had positively impacted public health, with improvements in policies, interventions, and public behavior related to health reporting and disease prevention. The enforcement of RA 11332 was perceived as effective in reducing the spread of notifiable diseases and enhancing overall public health outcomes in the area.

Lastly, regarding system sustainability, the effectiveness was again very high. Respondents were aware of sustainability efforts related to RA 11332 and believed that the disease surveillance system could be maintained in the long term. Additionally, local communities were recognized as contributing to the system's sustainability, suggesting strong support for continued disease reporting and response.

Analyzing the correlation between the extent of implementation and the level of effectiveness reveals several key findings. Strong positive correlations were observed between Policy Enforcement and various effectiveness measures, including reporting compliance (0.765), timeliness of reports (0.745), public health outcomes (0.691), and system sustainability (0.692), all of which were statistically significant at the $p < .001$ level. Similarly, Awareness and Training demonstrated high correlations with effectiveness indicators, particularly with public health outcomes (0.801) and reporting compliance (0.778), both with $p < .001$. Stakeholders' Collaboration also showed a strong positive impact on effectiveness, with high correlations across all variables, including reporting compliance (0.848) and timeliness of reports (0.822), suggesting its importance in improving system performance.

On the other hand, Reporting Infrastructure exhibited moderate correlations, with the weakest being for data accuracy (0.472). However, all correlations were statistically significant at $p < .01$. Resource Availability showed a mix of moderate to high correlations, notably with timeliness of reports (0.717) and public health outcomes (0.599), highlighting its role in enhancing operational efficiency and health outcomes.

In summary, the findings indicate that factors such as policy enforcement, awareness and training, and stakeholders' collaboration are strongly associated with improvements in reporting compliance, timeliness, and health outcomes, while reporting infrastructure and resource availability contribute moderately but still significantly to system effectiveness. These results underscore the importance of comprehensive implementation strategies to enhance public health systems.

4.2. Conclusion

Based on the results, the hypothesis that "There is no significant relationship between the extent of implementation and the level of effectiveness of the Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332)" can be rejected. The data show strong positive correlations between the degree of implementation across critical factors, such as policy enforcement, training and awareness, and stakeholder collaboration and key effectiveness indicators, including compliance with reporting, timeliness, public health outcomes, and system sustainability.

These correlations are statistically significant, with p-values below 0.001 for most measures, indicating a substantial link between the implementation depth and improvements in the Act's outcomes. In particular, better implementation of these elements is associated with higher compliance, quicker reporting, and more successful public health interventions.

As a result, the findings suggest that the degree of implementation plays a significant role in the success of RA 11332. This contradicts the null hypothesis, reinforcing the necessity of strengthening the implementation processes to improve the overall effectiveness of the Act in managing notifiable diseases and health events.

4.3. Recommendations

To enhance the implementation of RA 11332 (Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act) in the Philippines, a comprehensive, multi-faceted approach is required that addresses key areas such as policy enforcement, targeted training, reporting infrastructure, stakeholder collaboration, and resource allocation. The success of this law hinges on optimizing each of these areas to improve the accuracy, timeliness, and sustainability of disease reporting.

One of the main challenges identified in the study is the inconsistency of policy enforcement, particularly among younger healthcare personnel (ages 22-30), who may lack experience and confidence in applying the law's provisions. To address this, a more targeted approach to training is necessary. Specialized programs focusing on the legal aspects of RA 11332, including reporting procedures, would help build confidence in the law's application. Additionally, integrating real-world case studies into training can make learning more relevant and practical. Continuous learning initiatives, such as refresher courses and mentorship programs, are essential for maintaining up-to-date knowledge and ensuring consistent application of the law across all age groups. Regular workshops and training sessions should be scheduled to ensure that staff members are well-versed in the latest updates to RA 11332 and its implications on disease surveillance.

Another critical issue identified in the study is the lack of adequate reporting infrastructure, particularly in resource-limited health facilities, which hinders timely and accurate disease reporting. The study suggests that increasing investment in technological and logistical resources is crucial. Upgrading internet access, improving reporting software, and equipping facilities with modern diagnostic tools will enable healthcare workers to submit reports quickly and efficiently, minimizing delays and ensuring data accuracy. Additionally, implementing a centralized data system that enables seamless communication and data transfer between hospitals, RHUs, and the Department of Health (DOH) will streamline reporting channels and reduce technological barriers.

The study also highlights the need for stronger stakeholder collaboration within the health system. A key recommendation is fostering better coordination between younger and older staff. Younger employees, who are often more familiar with new technologies, should be paired with senior personnel with valuable disease reporting experience. Establishing mentorship programs can facilitate knowledge sharing and help bridge the gap between technological expertise and experience. Encouraging younger staff to participate in meetings actively will improve communication, while creating clearer communication protocols and utilizing digital tools will help minimize delays in coordination. This will ensure that all stakeholders are aligned with the reporting requirements.

Regarding resource allocation, the study emphasizes the need for better financial and operational support in many healthcare facilities. While some hospitals and RHUs are well-equipped to meet the demands of disease surveillance, others face significant challenges due to limited resources. The study recommends advocating for increased funding from governmental and non-governmental sources to enhance reporting capabilities. This includes funding diagnostic tools, maintaining updated medical equipment, and improving reporting infrastructure. Ensuring adequate resources for staff, such as providing time for proper data verification and minimizing pressures associated with meeting reporting deadlines, will significantly improve the accuracy and timeliness of reports. High-performing facilities can mentor others, sharing best practices and improving overall compliance across the health system.

The study also identifies variations in disease reporting effectiveness based on healthcare personnel's educational backgrounds. Employees with Bachelor's degrees may require more specialized training in data verification and reporting compliance. Strengthening formal training programs, such as peer review mechanisms and mentorship opportunities with Master's degree holders, will help address gaps in reporting accuracy. Professional development opportunities will ensure that employees remain engaged and up-to-date on the latest reporting guidelines and technologies, further contributing to system sustainability and better reporting outcomes.

Finally, the study stresses the importance of ensuring the long-term sustainability of RA 11332's implementation. Regular audits and feedback loops are essential to evaluate the effectiveness of the disease reporting system. Facilities should engage in periodic self-assessments and utilize external audits to identify areas for improvement. Based on these findings, facilities can adjust training programs, improve reporting systems, and allocate resources more effectively. Involving local communities in disease surveillance and reporting will enhance the system's sustainability. The study advocates for increased community engagement through educational campaigns highlighting the importance of reporting notifiable diseases and the role of RA 11332 in protecting public health.

In conclusion, enhancing the effectiveness of RA 11332 requires a holistic approach that addresses policy enforcement, targeted training, improved reporting infrastructure, stakeholder collaboration, and resource allocation. By implementing these strategies, healthcare facilities can significantly improve their disease reporting capabilities, leading to better public health outcomes. Continuous monitoring and adaptation of these strategies will ensure that the system remains effective, sustainable, and responsive to the evolving public health landscape in the Philippines.

Acknowledgement

The researcher expresses his sincere appreciation and deepest gratitude to those who provided valuable support and assistance in completing this study.

First and foremost, the **ALMIGHTY GOD**, the researcher is grateful for God's provision of the endurance, determination, and faith necessary to complete this study.

HON. MARIO R. BRIONES, EdD, University President, for making LSPU a high-performing and excellent academic home

Prof. EDEN C. CALLO, EdD, Internal Statistician, for her creativity and insightful recommendations on the validity of the questionnaires.

Prof. VICTOR A. ESTALILLA JR., MA, External Statistician, for his valuable assistance in analyzing statistical computation and ensuring the statistical data's accuracy and reliability

Prof. BAYANI A. GUIA, MBA, Subject Specialist, for his guidance and source of inspiration for completing this study

MARY JANE D. FUENTES, DPA, Dean, College of Business Administration and Accountancy, for her extensive knowledge and expertise in the field and for providing valuable inputs that contributed to the overall quality of the research.

Atty. RUSHID JAY S. SANCON, PhD, for his exceptional supervision, invaluable suggestions, and unwavering support and guidance throughout the research process

NOEL H. NATIVIDAD, DPA, PhD, External Panelist, for sharing his practical knowledge and insights to produce a quality research paper

Colleagues in the **BAYBAY Interlocal Health Zone Health Professionals**, the researcher gratefully recognizes their support in completing his postgraduate Degree.

His wife, **NINA KRISTINA PEREZ – GALEMA, RN**, for her unwavering support, patience, and encouragement have been my constant source of strength throughout the journey of completing this thesis. Her understanding, love, and faith in my abilities have kept me grounded and motivated, especially during the most challenging moments of this academic endeavor.

His daughter, **BETTINA MARGARETTE P. GALEMA**, for your innocent smiles and joyful spirit have been a constant reminder of why I strive to do my best. You inspire me every day to keep going and never give up.

Most importantly, his parents, **MR. VIRGILIO GALEMA** and **MRS. CORAZON GALEMA, DMD**, who are his most significant source of inspiration.

The Researcher

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