Public Health Law and Organizational Accountability in Tuberculosis Control in Malaysia: A Conceptual Framework

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ABSTRACT

Tuberculosis (TB) prevention and control requires more than clinical management or individual awareness; it also depends on the interaction among public health rules, organizational systems, workplace conditions and employee behaviour. Malaysian studies have examined TB knowledge, attitudes, stigma, contact investigation and treatment continuity, while occupational health research has examined workplace controls and compliance. Legal scholarship has addressed infectious disease control and occupational safety and health. These strands remain insufficiently integrated in a Malaysia-focused framework explaining how applicable legal and policy expectations may be translated into workplace prevention. Unlike TB management frameworks that primarily emphasize screening, early detection and treatment, this paper focuses on the legal and organizational processes that may shape prevention in Malaysian workplaces. It draws on a conceptual synthesis of Malaysian TB studies, occupational TB prevention reviews, Malaysian public health and occupational safety and health scholarship, and international guidance on ethics and human rights. Sources were compared across four domains rather than statistically combined. This paper is neither a systematic review nor an empirical study. Organizational accountability is conceptualized as implementation processes involving assigned responsibilities, procedures, resources, training, monitoring and corrective action. Workplace preventive capacity is proposed as a mechanism connecting accountability and employee compliance. Rights-based governance including confidentiality, dignity, non-discrimination and access to care is treated as a cross-cutting condition, while workplace and socioeconomic factors are considered contextual boundaries. Five theoretical propositions are advanced for future empirical testing. The framework is an integrative conceptual model, not a validated predictive model. It is proposed relationships remain to be tested and are not assumed to apply uniformly across all workplaces or legal settings.

Keywords: tuberculosis; public health law; organizational accountability; employee compliance; Malaysia

INTRODUCTION

Tuberculosis (TB) requires sustained public health action beyond clinical care. Prevention involves timely diagnosis and notification where legally required, treatment, contact investigation and measures to reduce transmission. These activities depend on coordination among patients, healthcare providers, public health authorities and organizations. Workplaces matter because their conditions affect exposure, access to information and the feasibility of prevention.

Evidence from Malaysia illustrates that TB prevention involves interacting behavioral and structural issues. Mokhtar et al. (2020), using a survey of 1,587 TB patients across several Malaysian states, reported relatively high levels of knowledge and preventive action but more moderate preventive attitudes, with differences by

residential location. Idris et al. (2020) found that a school-based TB education programme improved knowledge and stigma scores, although changes in attitude and practice were not statistically significant. These findings caution against assuming that information alone automatically produces preventive behaviour. Similarly, Loh et al. (2023) found that TB contacts in Kedah generally had good knowledge and constructive attitudes but also reported a substantial level of stigma. Knowledge, attitudes, stigma and behaviour should therefore be considered together rather than as interchangeable outcomes.

Workplace-focused evidence reinforces the need to consider organizational conditions. Ismail et al. (2021) reviewed 15 studies involving 1,572 healthcare workers and 249 health facilities. The review identified low compliance with TB preventive measures in the included settings, with shortcomings most frequently reported in administrative controls, followed by engineering and personal protective controls. Limited managerial supp-

ort and negative attitudes were identified as factors influencing compliance. Schmidt et al. (2018), in a systematic review of occupational TB control measures, found that all ten included before-and-after studies reported a decline in tuberculin skin-test conversion after interventions, although the evidence quality was low because of observational designs and risks of bias. Together, these reviews suggest that organizational implementation matters, while also showing the need for careful interpretation of the available evidence.

In Malaysia, the Prevention and Control of Infectious Diseases Act 1988 (Act 342), provides the statutory framework for infectious disease prevention and control. Tuberculosis is listed as “tuberculosis (all forms)” in Part I of the First Schedule as substituted by the Prevention and Control of Infectious Diseases (Amendment of First Schedule) Order 2024 (P.U. (A) 392/2024). The Ministry of Health Malaysia’s Clinical Practice Guidelines: Management of Tuberculosis (Fourth Edition) provides clinical guidance for TB management. The principal Act must be read together with subsequent amendments and applicable subsidiary legislation. These legal and clinical sources provide important context, but they do not by themselves explain how organizations allocate responsibility, provide resources, train staff, monitor implementation or address barriers to compliance. Statutory obligations applicable to medical practitioners, public health officers, employers and employees must therefore be identified from the specific provision and setting rather than assumed to be identical.

This paper examines how applicable public health law and TB guidance may be translated into organizational practice in Malaysian workplaces. It brings legal and policy context, organizational accountability, workplace preventive capacity, employee compliance and rights-based governance into one process-oriented framework. The paper does not assume identical legal duties for all organizations or generalize findings from healthcare settings to every workplace.

PROBLEM STATEMENT AND RESEARCH GAP

Research on TB has investigated knowledge, attitudes, practices, stigma, health-seeking behaviour, contact investigation and treatment adherence. Malaysian studies provide evidence that these factors vary across populations and settings. The Malaysian systematic review by Ithnin et al. (2025) synthesized studies of TB knowledge, attitudes and practices among different communities and reinforces the value of examining public understanding within its social context. The KAPS-TB questionnaire developed and validated by Zakaria et al. (2023) provides a locally relevant instrument for assessing knowledge, attitudes, practices and stigma among younger populations. These studies contribute to understanding individual and community dimensions of TB prevention.

Malaysian studies also show that prevention depends on institutional processes. Goroh et al. (2023) identified system-, clinic-, healthcare-worker-, guardian- and treatment-related factors affecting contact investigation and preventive therapy for children in Sabah. Goroh et al. (2020) found that direct notification by health inspectors and socioeconomic and stigma-related factors were relevant to continued participation in contact investigation. These findings point to the importance of service organization and communication, although they do not directly measure workplace employee compliance.

Treatment-related evidence also points to structural constraints. Oh et al. (2024), using qualitative interviews with 30 Malaysian patients who had interrupted TB treatment but later achieved successful outcomes, identified socioeconomic, patient, therapy, healthcare and condition-related barriers. Financial pressures could lead

participants to prioritize work over health, while social and financial support could help prevent interruption. Muzaini et al. (2026) examined determinants of TB treatment success among the working population in Malaysia, highlighting the relevance of work-related circumstances and treatment monitoring. Although treatment adherence is not identical to workplace infection-control compliance, these findings show why TB policies should account for the relationship between employment, economic security and health behaviour.

At the same time, legal research in Malaysia has discussed the role of Act 342 and compliance during the COVID-19 Movement Control Order. Mohd Salleh and Md. Said (2022) identified issues such as inconsistent standard operating procedures, emergency planning and non-compliance in the pandemic context. Muhamad Said et al. (2021) examined the legal basis of the Movement Control Order and its use as a preventive public health measure. Wong et al. (2024) compared public health law in Malaysia and the United States. These studies are relevant to understanding law as a public health instrument, but COVID-19 emergency measures are not interchangeable with TB control, and pandemic-era findings should be used as contextual legal analysis rather than direct evidence of TB workplace practice.

Malaysian OSH scholarship provides a broader legal context. Zulkifly and Ranjan (2024) examined enforcement of OSH compliance in construction; Jamaluddin (2010) reviewed the development of Malaysian OSH law; and Md. Ismail (2014) analysed occupational-disease claims in mining and manufacturing, including evidential difficulties in linking disease to employment. These sources inform the governance discussion but do not establish TB-specific legal duties or outcomes.

The research gap is not an absence of studies on TB, workplace prevention or public health law. Rather, the literature addresses these subjects across distinct questions, populations and institutional settings. Research has examined TB knowledge, stigma and practices (Ithnin et al., 2025; Zakaria et al., 2023), occupational TB controls and compliance (Ismail et al., 2021; Schmidt et al., 2018), and public health or occupational safety and health governance (Wong et al., 2024; Zulkifly & Ranjan, 2024). Handayani et al. (2023) provide a related TB management and control framework emphasizing programme themes such as early detection, screening and treatment. The present paper makes a complementary, Malaysia-focused contribution at the organizational implementation level, it explains how applicable legal and policy expectations may be translated into organizational accountability, practical preventive capacity and employee compliance, while treating rights-based governance as a condition shaping that pathway. Its novelty lies in this integration and the explicit mediation proposition, not in claiming that the component topics or all TB frameworks are unprecedented. The proposed relationships have not yet been empirically demonstrated.

OBJECTIVES OF THE PAPER

1. To examine the relevance of Malaysian public health law and national tuberculosis (TB) guidance to TB prevention and control.
2. To conceptualize organizational accountability as a mechanism through which applicable legal and policy expectations may be translated into workplace preventive capacity and employee compliance.
3. To integrate rights-based governance principles, including confidentiality, dignity, non-discrimination and access to care, into the conceptualization of workplace TB prevention.
4. To develop an integrated conceptual framework and theoretical propositions for future empirical research on organizational accountability and TB prevention in Malaysia.

CONCEPTUAL APPROACH AND FRAMEWORK DEVELOPMENT

This paper develops an interpretive conceptual synthesis rather than a systematic review or an empirical study. Sources were selected purposively because they address at least one of four domains relevant to the research question which are firstly, Malaysian TB knowledge, attitudes, stigma, contact investigation and treatment, secondly is occupational TB prevention and employee compliance. Then Malaysian public health law and occupational safety and health (OSH) governance and ethics and human-rights principles in infectious disease control. The source base comprises Malaysian empirical studies, occupational TB reviews, legal scholarship, the principal Act and relevant amendment instruments, and official public health guidance. COVID-19 legal

scholarship was retained only for general insights about legal implementation and compliance, not as direct evidence of TB workplace outcomes.

The synthesis proceeded in three interpretive steps. First, the focus, population, setting and design of each source were identified to avoid treating unlike evidence as interchangeable. Second, findings were compared within and across the four domains to identify recurring implementation issues, including clarity of requirements, allocation of responsibility, resources, feasibility, stigma and protection of rights. Third, these issues were organized into a proposed process pathway linking public health law and policy, organizational accountability, workplace preventive capacity, employee compliance and public health protection. Rights-based governance was positioned as a cross-cutting condition, while workplace and socioeconomic characteristics were treated as contextual boundaries. No formal systematic-search protocol, database-by-database search log, screening flow, formal risk-of-bias appraisal or statistical aggregation was undertaken. The synthesis is therefore selective and interpretive, does not claim exhaustive coverage, and generates propositions for testing rather than empirical findings.

The framework is informed by three complementary theoretical lenses. An implementation perspective explains why formal legal and policy expectations do not automatically produce action: implementation depends on interpretation, assigned responsibility, resources, coordination and review. Organizational accountability provides the governance lens for examining who is responsible, what actions are expected, how performance is documented and monitored, and how deficiencies are addressed. A rights-based public health perspective requires preventive action to be lawful, evidence-informed, necessary and proportionate, while respecting dignity, confidentiality, non-discrimination and access to appropriate information and care. These lenses are used as sensitizing concepts to structure the synthesis; the paper does not claim to test or validate a unified established theory.

LITERATURE REVIEW

Tuberculosis prevention and control in Malaysia

Malaysia's TB response operates through clinical services, public health surveillance, contact investigation, treatment and preventive interventions. The Ministry of Health Malaysia's Clinical Practice Guidelines: Management of Tuberculosis (Fourth Edition) provides a national clinical reference for diagnosis and management (Malaysia, 2021). Act 342 supplies a statutory framework for infectious disease control, but the legal duties of specific actors should be drawn from the precise provisions and applicable regulations rather than inferred broadly from the Act's public health purpose.

Local research shows that TB prevention involves more than awareness of symptoms or transmission. Mokhtar et al. (2020) found high knowledge and preventive action among a large sample of TB patients, while preventive attitudes were more moderate and findings varied by place of residence. Idris et al. (2020) demonstrated that a TB education programme could improve knowledge and stigma outcomes among adolescents, but the study did not find significant differences in attitude and practice scores at the measured follow-up. These results support the distinction between knowledge, attitudes and actual behaviour.

The study by Loh et al. (2023) of 338 TB contacts in Kedah similarly found generally good knowledge and constructive attitudes, alongside a high stigma score. Zakaria et al. (2023) developed and validated a KAPS-TB instrument that measures knowledge, attitude, practice and stigma among younger populations in Kelantan. Ithnin et al. (2025) reviewed Malaysian studies of TB knowledge, attitudes and practices across different communities. Collectively, these sources indicate that TB communication and prevention programmes should consider population differences and should not assume that awareness alone is sufficient.

Contact investigation, treatment continuity and system capacity

Goroh et al. (2023) identified multiple factors affecting contact investigation and TB preventive therapy for children in Sabah. Their qualitative findings included health-system coordination, clinic arrangements, healthcare worker commitment and knowledge, communication, guardian cooperation and treatment-related concerns. The study is particularly useful because it describes prevention as a process involving several actors

rather than as an isolated clinical decision. It also emphasizes that programme design must account for service capacity and the practical concerns of families.

Oh et al. (2024) found that interruption of TB treatment in Malaysia was shaped by socioeconomic, patient, therapy, healthcare and condition-related factors. Financial burden could cause patients to prioritize work over health, while social and financial support could facilitate treatment continuation. These findings suggest that organizations may contribute to TB control by enabling access to care, communicating supportively and reducing avoidable work-related barriers. This is a conceptual implication, not proof that a particular employer intervention will necessarily improve treatment outcomes.

Muzaini et al. (2026) examined TB treatment success among the working population in Malaysia, making employment circumstances and treatment monitoring relevant to the wider discussion of TB control. These concerns make workplace engagement relevant to the broader public health response. However, employers should not be treated as substitutes for clinical providers or public health authorities. Their appropriate role depends on applicable law, occupational context and the need to protect employee privacy.

Occupational TB prevention and employee compliance

Occupational TB prevention literature commonly distinguishes administrative controls, environmental or engineering controls, and respiratory protection. Administrative measures may include risk assessment, early recognition and referral, triage arrangements, training, procedures and monitoring. Environmental controls aim to reduce exposure through appropriate ventilation and related design measures. Respiratory protection is a further component where indicated by risk and applicable guidance. The appropriate combination depends on the setting, risk assessment and authoritative technical guidance.

Ismail et al. (2021) found low compliance with TB preventive measures in the studies included in their systematic review, with administrative weaknesses particularly prominent. The authors also reported that managerial support and employee attitudes influenced compliance. Schmidt et al. (2018) found consistent declines in tuberculin skin-test conversion after combined workplace control interventions in ten before and after studies, but rated the overall evidence quality as low because the studies were observational and had methodological limitations. The evidence therefore supports the importance of implementing combined control measures while cautioning against overstating certainty about their effect size.

The Malaysian exploratory sequential mixed-methods study protocol by Ismail et al. (2021) provides a locally relevant occupational perspective. It describes a planned study of Malaysian healthcare workers and frames compliance in relation to Ministry of Health workplace prevention guidance, perceptions and behaviour. As a protocol, it should not be cited as evidence of completed empirical findings. Its relevance here is that compliance among Malaysian healthcare workers was identified as a research question requiring systematic investigation.

Evidence from healthcare facilities cannot automatically be transferred to offices, factories, construction sites, educational institutions or other workplaces. These settings differ in ventilation, crowding, contact patterns, occupational tasks, access to occupational health services and organizational resources. The proposed framework therefore treats sector and workplace risk as contextual factors and recommends future empirical research across multiple employment settings.

Public health law and organizational accountability in Malaysia

In Malaysia, the Prevention and Control of Infectious Diseases Act 1988 (Act 342) provides the statutory framework for the prevention and control of infectious diseases. Tuberculosis is expressly listed as “tuberculosis (all forms)” in Part I of the First Schedule as substituted by the Prevention and Control of Infectious Diseases (Amendment of First Schedule) Order 2024, P.U. (A) 392/2024. The principal Act must be read with later amendments and applicable subsidiary legislation. The Prevention and Control of Infectious Diseases (Amendment) Act 2025 (Act A1742) came into operation on 1 May 2025.

The Prevention and Control of Infectious Diseases (Amendment) Act 2025 (Act A1742), in force from 1 May 2025, amended section 2 and subsection 10(2), inserted section 14A (isolation or surveillance), section 15A

(tracking and monitoring), section 21A (directions of the Director General), section 21B (investigation), section 21C (power to require information), section 22A (offences by bodies corporate) and section 24A (jurisdiction to try offences), and amended other provisions. The scope of each power or offence depends on its precise wording and the circumstances. These amendments should not be read as imposing identical duties on every employer or employee.

The Prevention and Control of Infectious Diseases (Compounding of Offences) (Amendment) Regulations 2025, P.U. (A) 139/2025, came into force on 1 May 2025 and replaced the First Schedule to the 1993 Compounding of Offences Regulations. The substituted schedule identifies offences under subsection 10(2), subsection 11(5), subsection 21A(3) and paragraphs 22(b), 22(c) and 22(d) of Act 342 as compoundable. This instrument concerns compounding, it is not a consolidated reprint of Act 342. The legal analysis therefore distinguishes the principal Act, the 2024 First Schedule Order, Act A1742 and the 2025 compounding regulations.

Research on the Movement Control Order provides contextual lessons about the relationship between legal rules, implementation and compliance. Muhamad Said et al. (2021) examined the legal mechanisms supporting the Malaysian MCO, while Mohd Salleh and Md. Said (2022) discussed the implementation of infectious disease control laws and compliance with standard operating procedures. These works indicate that legal interventions need clarity and workable implementation. Because they concern COVID-19 and emergency controls, their findings are not direct evidence of TB control and are used here only to inform the general discussion of legal governance.

Wong et al. (2024) compared public health law in Malaysia and the United States and offers a broader account of legal approaches to public health. For TB prevention, the key conceptual point is that legal powers and duties require institutions capable of implementing them lawfully and transparently. Organizational accountability can help connect legal and policy expectations with procedures, responsible personnel, documentation, monitoring and review. However, this paper does not assert that organizational accountability creates a legal duty where the legislation does not provide one.

Occupational safety and health (OSH) law as a related context

The Occupational Safety and Health Act 1994 (Act 514) is a separate but relevant workplace statute. The Occupational Safety and Health (Amendment) Act 2022 (Act A1648) came into force on 1 June 2024. The amended Act includes the employer's general duty to ensure, so far as practicable, employees' safety, health and welfare at work (section 15) and a duty to conduct and implement risk assessment (section 18B), subject to the Act's scope and exceptions (Malaysia, 1994, 2022). These provisions provide a general OSH context, they should not be presented as TB-specific duties or as a substitute for the requirements of Act 342.

The cited OSH scholarship helps explain compliance, enforcement and occupational-disease evidence, but it does not establish that every TB case is occupationally acquired or compensable. The interaction among public health law, OSH obligations, employment arrangements and social security should be analysed under the specific legislation and facts relevant to each case.

Handayani et al. (2023) provide a related TB-management framework based on evidence synthesis, with emphasis on programme and intervention themes such as early detection, screening and treatment. The present framework addresses a different level: how applicable public health requirements may be translated into organizational practice in Malaysian workplaces. It is complementary, not a claim to be the first TB framework.

Ethics, human rights, confidentiality and stigma

TB prevention may involve sensitive health information, contact investigation and clinical assessment, and in some circumstances lawful restrictions to prevent transmission. Kraemer et al. (2011) and Selgelid (2008) discuss ethical limits and human-rights considerations in TB control. Applied to workplaces, these sources support safeguards for confidentiality, dignity, non-discrimination, proportionality and clear communication. Such safeguards operate alongside, not in place of, applicable legal reporting and public-health requirements.

Malaysian studies report stigma among TB contacts and describe implementation barriers in education and contact-investigation settings (Goroh et al., 2023; Idris et al., 2020; Loh et al., 2023). This evidence supports examining whether respectful communication and appropriate confidentiality arrangements are associated with trust and cooperation; it does not establish that these safeguards eliminate stigma.

Organizations should handle employees' health information only on an appropriate legal and professional basis, with access and disclosure limited as required by applicable rules. A TB diagnosis alone should not be characterized as misconduct. Whether rights-respecting arrangements improve trust and participation remains an empirical question.

PROPOSED CONCEPTUAL FRAMEWORK

The framework links five components which are public health law and policy context, organizational accountability, workplace preventive capacity, employee compliance and public health protection. Rights-based governance operate across these components.

Public health law and policy context

This component refers to the applicable legal framework, official public health guidance and organizational policies relevant to infectious disease prevention. In Malaysia, Act 342 and relevant Ministry of Health guidance provide important parts of the context. The component is external to any single organization because it establishes the broader environment within which duties, powers and recommended practices are interpreted. The model does not assume that every provision applies to every workplace. Legal applicability must be established individually.

Organizational accountability

Organizational accountability is defined here as the extent to which an organization assigns responsibility for workplace prevention, communicates expectations, allocates appropriate resources, establishes procedures, documents actions, monitors implementation and responds to identified gaps. It is not limited to punishment after a failure. It includes preventive governance and review. Its observable dimensions may include a named responsible person or unit, written procedures, staff education, risk assessment, incident escalation routes, audit or review arrangements, and corrective action where deficiencies are identified.

Workplace preventive capacity

Workplace preventive capacity refers to the practical ability to implement suitable prevention measures. Depending on the setting, this may include ventilation and environmental arrangements, access to appropriate protective equipment, referral pathways, staff training, risk communication, procedures for responding to suspected exposure and coordination with health services. The specific measures should be determined by competent public health and occupational health guidance rather than by a generic checklist alone.

Employee compliance

Employee compliance refers to the extent to which workers follow relevant, lawful and feasible preventive procedures. It may include participation in training, adherence to relevant respiratory or environmental precautions, following referral or reporting procedures, and cooperation with appropriate workplace prevention arrangements. Compliance is influenced not only by knowledge and attitudes but also by the clarity of instructions, workload, resource availability, management example, trust and perceived stigma. Compliance should therefore be evaluated together with the conditions under which it is expected.

Public health protection

Public health protection is the intended outcome of the framework. It refers to improved implementation of preventive measures, reduced avoidable exposure, timely engagement with health services and better coordination between organizations and public health actors. The present paper does not claim that

organizational accountability alone will reduce TB incidence or guarantee a particular clinical outcome. TB outcomes are influenced by wider epidemiological, socioeconomic, clinical and health-system factors. Public health protection is therefore treated as a broader, multi-determined outcome.

Rights-based governance

Rights-based governance cuts across all components. It includes confidentiality, dignity, non-discrimination,

transparent communication, access to information and appropriate support. Contextual factors include sector, workplace size, crowding, ventilation, workforce composition, employment security, access to occupational health services, management resources and local TB burden. These factors may strengthen or weaken the relationships proposed in the framework.

The constructs are distinct. Organizational accountability concerns the governance arrangements established by an organization; preventive capacity concerns its practical ability and resources to implement controls; employee compliance concerns workers' adherence to relevant, lawful and feasible procedures; rights-based governance concerns safeguards shaping implementation; and public health protection is the downstream, multi-determined outcome. These distinctions prevent organizational systems, practical capability, individual behaviour and population-level outcomes from being treated as interchangeable.

Potential indicators should match each construct. Accountability may be assessed through document audits of assigned roles, procedures, resources, monitoring and corrective action. Preventive capacity may be assessed through workplace observations of ventilation, protective resources, training and referral arrangements. Employee compliance may be assessed through validated surveys, structured observation and de-identified records. Rights-based governance may be assessed through confidentiality and non-discrimination procedures, access to information and support, and workers' reported trust. Proximal public-health outcomes may include implementation fidelity, timely referral and coordination with health services. Measures must be adapted to the setting and applicable guidance.

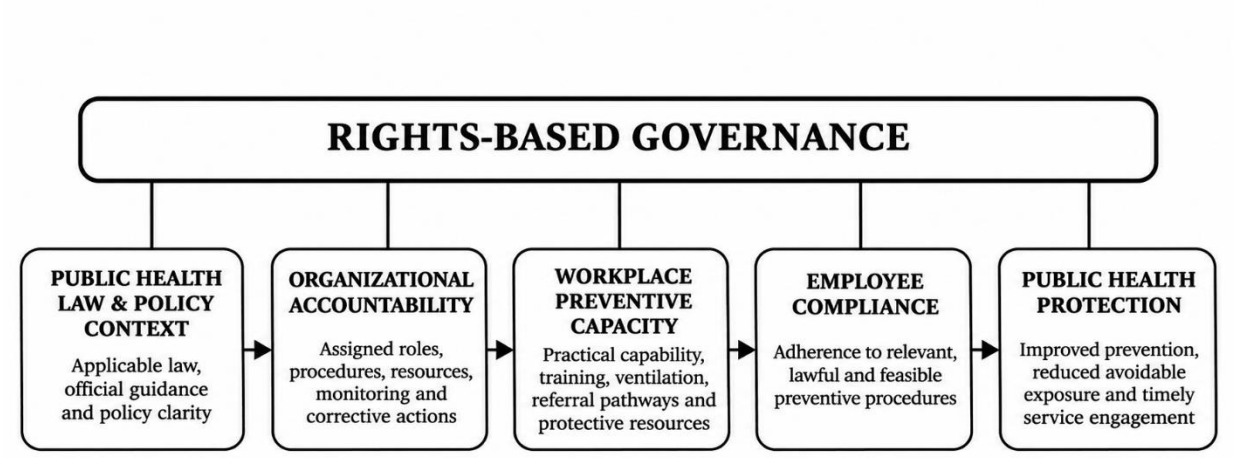

Figure 1. Proposed conceptual framework for public health law and organizational accountability in tuberculosis control in Malaysia.

THEORETICAL PROPOSITIONS

The framework generates the following propositions for future empirical research.

Proposition 1: Public health law and policy clarity are positively associated with organizational accountability.

Clear legal and policy requirements may help organizations identify applicable responsibilities and translate them into internal arrangements. This proposition concerns the clarity and interpretation of requirements; it does not assume that legislation alone guarantees implementation or compliance.

Proposition 2: Organizational accountability is positively associated with workplace preventive capacity.

Organizations that assign responsibility, provide resources, establish procedures and review implementation may be better positioned to maintain preventive capacity. The proposition is consistent with occupational TB literature emphasizing administrative controls and managerial support (Ismail et al., 2021; Schmidt et al., 2018). Empirical work should test this relationship in different Malaysian workplace sectors.

Proposition 3: Workplace preventive capacity is positively associated with employee compliance.

Employees may be more able to follow preventive procedures when they receive clear training, have access to suitable resources and work within feasible arrangements. Occupational TB reviews identify compliance challenges and the relevance of organizational controls, particularly in healthcare settings (Ismail et al., 2021). These sources support investigating the relationship but do not establish that it operates identically in every sector. The proposition recognizes that individual motivation remains relevant while avoiding the assumption that compliance is solely an individual responsibility.

Proposition 4: Organizational accountability is indirectly associated with employee compliance through workplace preventive capacity.

Organizational accountability may be associated with employee compliance partly by shaping the practical conditions in which prevention is carried out. In this proposition, workplace preventive capacity is specified as the potential mediator between organizational accountability (predictor) and employee compliance (outcome). Empirical testing should estimate the indirect effect through preventive capacity and also examine whether a direct association remains after accounting for the mediator. Where data are cross-sectional, results should be described as indirect statistical associations rather than proof of a causal mechanism; stronger causal interpretation requires temporal ordering and an appropriate design.

Proposition 5: Rights-based governance is positively associated with trust and participation in preventive arrangements.

Respect for privacy, dignity and non-discrimination may support trust and reduce the risk that stigma discourages appropriate health seeking or cooperation. Malaysian studies documenting TB stigma and barriers to participation, together with international ethical guidance, make this relationship relevant to investigate (Goroh et al., 2020, 2023; Idris et al., 2020; Loh et al., 2023; World Health Organization, 2017). Research should test the relationship without presuming that rights-based communication eliminates stigma or all barriers to care.

DISCUSSION

Public Health Law and Policy as the Legal Context

The legal framework establishes the public-health context within which TB prevention takes place. Its practical significance for this paper is that organizations must identify which provisions and official guidance apply to their activities, rather than infer a general employer duty from the existence of Act 342. The statutory schedule, later amendments and clinical guidance have different functions and should be read separately.

The commencement notice and compounding regulations are also distinct from the amendment Act, one fixes the date the Act takes effect, while the other specifies which offences may be compounded. The conceptual implication is that legal clarity depends on understanding the function and scope of each instrument. COVID-19 scholarship is used only for broader implementation lessons, not as direct evidence of TB workplace outcomes (Muhamad Said et al., 2021; Mohd Salleh & Md. Said, 2022; Wong et al., 2024).

Organizational Accountability as an Implementation Mechanism

A central argument of the framework is that legal and policy expectations need to be translated into organizational arrangements before they can reliably shape prevention in daily work. Organizational accountability is therefore defined more broadly than disciplinary action after an incident. It includes assigning

responsibility, communicating procedures, allocating resources, documenting relevant actions, reviewing implementation and correcting identified gaps. These dimensions make accountability observable and potentially measurable. They also distinguish a written policy from an implemented system. An organization may have a policy document yet lack clear ownership, staff understanding or the resources needed to put it into practice.

Occupational TB reviews identify gaps in workplace preventive practice and highlight the relevance of administrative controls and management support, particularly in healthcare settings (Ismail et al., 2021; Schmidt et al., 2018). Malaysian occupational safety and health scholarship adds a broader perspective on legal compliance and enforcement (Jamaluddin, 2010; Zulkifly & Ranjan, 2024). These sources justify testing the proposed relationship between accountability and preventive capacity, but do not establish that it operates identically across all sectors.

Workplace Preventive Capacity and Employee Compliance

Preventive capacity may make compliance more feasible by ensuring that workers receive clear instructions, training, suitable resources and workable procedures. The proposition concerns the conditions that enable adherence, not an assumption that organizational resources determine all employee behaviour.

Propositions 3 and 4 address related but distinct relationships: Proposition 3 proposes an association between preventive capacity and compliance, whereas Proposition 4 proposes an indirect association between accountability and compliance through preventive capacity. Future studies can test both the indirect pathway and any remaining direct association. Much of the available occupational TB evidence concerns healthcare settings, so transfer to other sectors requires empirical testing (Ismail et al., 2021; Schmidt et al., 2018).

Malaysian studies of TB education, stigma and treatment continuity show that knowledge alone does not explain all preventive behaviour (Idris et al., 2020; Mokhtar et al., 2020; Oh et al., 2024). These studies concern populations and processes different from workplace employee compliance; they provide contextual support for examining social and organizational conditions, not direct proof of the proposed workplace relationships.

Rights-Based Governance and Ethical Implementation

Rights-based governance is cross-cutting because TB prevention may involve sensitive information, referral or notification processes and stigma. Ethical guidance and scholarship support confidentiality, dignity, non-discrimination, proportionality and transparent communication (Kraemer et al., 2011; Selgelid, 2008; World Health Organization, 2017). These safeguards must be applied consistently with lawful public-health requirements and professional guidance.

Evidence of stigma and barriers to contact investigation makes it relevant to test whether rights-respecting communication is associated with trust and participation (Goroh et al., 2020, 2023; Idris et al., 2020; Loh et al., 2023). Proposition 5 is therefore a researchable association, not a confirmed causal effect.

Theoretical Contribution of the Proposed Framework

The framework's contribution is contextual and relational: it brings together Malaysian TB evidence, occupational TB prevention, public-health and OSH law, and international ethics guidance to explain a possible organizational pathway from applicable requirements to workplace prevention. Unlike TB management frameworks focused mainly on screening, detection and treatment (e.g., Handayani et al., 2023), this model foregrounds organizational accountability, preventive capacity, employee compliance and rights-based implementation in Malaysian workplaces.

The five propositions translate this framework into relationships for future testing: legal and policy clarity with accountability; accountability with preventive capacity; preventive capacity with compliance; an indirect accountability compliance pathway through capacity; and rights-based governance with trust and participation. They are theoretical propositions, not established effects.

Public health protection is a broad downstream aim, not a claim that organizational accountability alone reduces TB incidence. Epidemiological, clinical, socioeconomic and health-system factors also shape TB outcomes; the framework should therefore first be evaluated using implementation and service-process indicators.

Contextual Boundaries and Implications for Malaysia

The relevance of the framework across Malaysian workplaces depends on context. Healthcare facilities, factories, offices, construction sites and educational institutions differ in exposure patterns, ventilation, workforce composition, resources and access to occupational health services. These factors should be specified and measured as potential boundary conditions rather than combined into one undifferentiated moderator.

Research should use data appropriate to each level of analysis: organizational accountability can be assessed through documents and management records, while employee compliance requires employee-level measures such as surveys or observation. Combining these sources can show whether formal systems correspond with workers' experiences of training, resources, confidentiality and procedural feasibility.

IMPLICATIONS FOR POLICY AND PRACTICE

Organizations and employers

Employers and organizations should identify the legal and policy requirements applicable to their particular workplace and distinguish mandatory duties from recommended practices. Responsibility for coordinating prevention, escalating concerns and liaising with health services should be clearly assigned where appropriate. Any legal obligation must be tied to the relevant provision and circumstances.

Preventive arrangements should be proportionate to workplace risks and informed by competent public-health and occupational safety and health guidance. Organizations should provide understandable information, suitable training and workable procedures, and handle health-related information confidentially subject to applicable disclosure and reporting requirements.

Periodic review should identify gaps in training, resources and procedures and lead to corrective action. A punitive response alone may overlook practical barriers. These are framework-derived recommendations, not new statutory duties or proven interventions.

Public health authorities and policymakers

Public health authorities can support implementation through accessible, updated guidance that distinguishes legal requirements from recommended practice and clarifies referral, notification and communication processes. Collaboration with occupational health professionals, employers and worker representatives may help adapt arrangements to different workplaces.

Workers and worker representatives

Workers should have access to reliable information, appropriate preventive resources and a clear process for seeking advice or reporting concerns. Worker representatives may help communicate concerns about the feasibility of procedures, confidentiality and stigma. Participation in prevention should be supported by an environment in which health concerns can be raised without unnecessary disclosure or discriminatory treatment.

Public health communication

Communication should explain TB symptoms, transmission, prevention and timely assessment while addressing stigma. Education may improve knowledge and stigma-related outcomes, but knowledge gains do not necessarily produce consistent changes in practice (Idris et al., 2020; Mokhtar et al., 2020); communication should therefore be paired with accessible services and feasible workplace measures.

IMPLICATIONS FOR FUTURE RESEARCH

Future studies should develop and validate measures for legal and policy clarity, organizational accountability, preventive capacity, employee compliance, rights-based governance and proximal public-health outcomes. The KAPS-TB instrument may inform knowledge, attitude, practice and stigma measures among relevant populations (Zakaria et al., 2023), but it should not be treated as a measure of organizational accountability without adaptation and validation.

A sequential explanatory or convergent mixed-methods design could combine interviews with managers, employees, occupational-health personnel and public-health officers with quantitative testing of direct and indirect relationships. Useful data sources include policy documents, training and management records, structured workplace observations, staff surveys and interviews, and where lawful and ethical-identified referral or occupational-health records. Analyses should account for clustering, confounding, sector differences and temporal ordering; ethics approval, data minimisation and protection against re-identification are essential.

Contextual boundaries for future testing

Workplace size, sector, crowding, ventilation, resource availability, employment security and access to occupational-health services may influence different links in the proposed pathway. Future studies should specify which factor is expected to affect which relationship and measure it directly before proposing a formal moderation hypothesis.

Organizational compliance with legal requirements must be distinguished from employee compliance with workplace procedures. The former may be assessed through assigned roles, documented procedures, resource allocation and review records; the latter through validated surveys, observation or suitable administrative data.

Primary outcomes should initially focus on implementation and process indicators: assigned prevention responsibility, current procedures, training coverage, documented risk review, functioning referral pathways and completed corrective actions. Employee-level outcomes may include observed or reported adherence, timely referral and access to support; rights-related outcomes may include perceived confidentiality, trust and non-discrimination. Clinical or epidemiological outcomes require suitable design, data access and adjustment for wider determinants.

LIMITATIONS

This paper is conceptual and does not present new primary data. Its framework and propositions have not been empirically tested, and the interpretive synthesis did not use a registered or fully reproducible systematic-search protocol, formal screening flow or formal quality appraisal. The literature covers different populations, designs and purposes; findings from healthcare workers, adolescents, TB contacts and patients cannot be generalized automatically to all employees or workplaces. Some legal sources concern COVID-19 emergency measures rather than TB and are used only to inform broader legal-governance discussion. The Ministry of Health Malaysia reprint of Act 342 identified in the source list states that it incorporates amendments up to P.U. (A) 374/2006. The legal discussion therefore reads that base text alongside Act A1742 and the relevant 2024 - 2025 Gazette instruments. Before submission, each operative legal claim, section number, commencement detail and citation should be checked against the authoritative current Federal Gazette or consolidated legislation. This conceptual analysis is not legal advice and does not replace a provision-by-provision legal review.

CONCLUSION

TB prevention in Malaysia is shaped by clinical and behavioural factors as well as legal and organizational conditions. Malaysian studies describe knowledge, stigma and contact-investigation processes; occupational TB reviews examine workplace controls; and legal and ethical sources explain the broader governance context. Because these sources concern different populations and settings, their implications must be integrated cautiously.

This paper proposes a Malaysia-focused framework linking public-health law and policy, organizational accountability, workplace preventive capacity, employee compliance and public-health protection. It proposes that accountability may support compliance partly by enabling preventive capacity, while rights-based governance shapes implementation and workplace context conditions the relationships. The framework and propositions remain to be empirically tested.

Future research should test the proposed relationships across employment settings and examine the specific legal provisions applicable to each context, including how prevention can be implemented without unnecessary disclosure, stigma or discrimination.

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