



East Asian Personal Data Protection Laws and International Medical Data Sharing: Pathways for Coordination

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Abstract

The growing significance of digital governance in healthcare highlights the importance of secure and ethical medical data sharing. Within the Association of Southeast Asian Nations (ASEAN), member states have introduced personal data protection laws, yet divergences in scope, cross-border transfer rules, and health data exceptions create challenges for harmonization. This study adopts a qualitative research design, combining legal analysis, comparative review, and case-based examination, to evaluate ASEAN frameworks—including the ASEAN Data Management Framework (ADMF) and Model Contractual Clauses (MCCs)—against international mechanisms such as the OECD Recommendations on Health Data Governance, the European Health Data Space (EHDS), and the World Health Organization's International Health Regulations (IHR). Findings indicate that while ASEAN's legal infrastructure reflects shared principles of accountability and security, differences in implementation limit regional interoperability. To address these gaps, the paper proposes five coordination pathways: contractual harmonization, regional codes of conduct, adoption of privacy-enhancing technologies (PETs), establishment of emergency fast-track protocols, and development of governance models such as Data Access Committees (DACs) and ethical review boards. By integrating legal, technological, and governance dimensions, ASEAN can position itself as a trusted hub for secure medical data collaboration, advancing both regional integration and global health resilience.

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1. Introduction

The rapid growth of digital technologies has significantly increased the importance of data as a strategic resource in both economic and social development. In the field of healthcare, medical data sharing plays a critical role in advancing biomedical research, supporting cross-border clinical trials, and enhancing global public health responses, especially during pandemics (OECD, 2017; World Health Organization [WHO], 2024). However, the cross-border flow of sensitive medical data raises major concerns regarding privacy, security, and compliance with national data protection frameworks.

Within this context, the Association of Southeast Asian Nations (ASEAN) occupies a unique position in digital governance. On the one hand, ASEAN member states have made remarkable progress in enacting personal data protection laws, including Singapore's Personal Data Protection Act (Personal Data Protection Commission [PDPC], 2023), Thailand's PDPA (Office of the Personal Data Protection Committee [PDPC Thailand], 2022), Malaysia's PDPA 2024 (Government of Malaysia, 2024), and Indonesia's PDP Law (Government of Indonesia, 2022) ^[8]. On the other hand, significant differences remain in terms of legal scope, definitions of sensitive data, and conditions for cross-border transfers (ASEAN Secretariat, 2021) ^[1].

These divergences create challenges for establishing a coherent regional framework that can align with international mechanisms such as the European Health Data Space (European Commission, 2025) ^[3], the OECD's Recommendations on Health Data Governance (OECD, 2017), and the World Health Organization's International Health Regulations (WHO, 2024).

The present study seeks to address the following research questions:

1. How do ASEAN personal data protection laws regulate the processing and sharing of medical data?
2. What are the core principles and operational mechanisms of international medical data sharing frameworks?
3. What pathways can be developed to coordinate ASEAN legal frameworks with international mechanisms in order to facilitate secure and ethical medical data sharing?

The objective of this paper is to propose a set of coordination pathways that balance the protection of personal privacy with the promotion of international cooperation in medical data sharing. By conducting a comparative analysis of ASEAN data protection laws and international mechanisms, this study aims to provide both theoretical insights and practical policy recommendations.

2. Literature Review

2.1 Personal Data Protection Laws

The regulation of personal data has become a cornerstone of global digital governance. The General Data Protection Regulation (GDPR), enacted by the European Union in 2018, has set a global benchmark for personal data protection by introducing principles such as data minimization, accountability, and data subject rights (European Parliament & Council, 2016). Building upon this, the Organisation for Economic Co-operation and Development (OECD) has developed guidelines and recommendations that emphasize cross-border cooperation and health data governance (OECD, 2017). More recently, the Global Cross-Border Privacy Rules (CBPR) Forum has sought to provide a certification-based mechanism to ensure accountability and interoperability in international data transfers (Global CBPR Forum, 2022).

At the regional level, ASEAN has advanced its own initiatives to promote harmonization. The ASEAN Data Management Framework (ADMF) and the ASEAN Model Contractual Clauses (MCCs), both published in 2021, provide guidance for organizations on data governance and enable lawful cross-border data flows within the region (ASEAN Secretariat, 2021) ^[1]. These frameworks serve as voluntary but influential tools to bridge differences among member states' legal regimes.

2.2 Medical Data Sharing

Medical data sharing is critical for improving clinical outcomes and accelerating innovation. In the context of clinical trials, sharing data across borders supports multi-center studies and increases the validity of research findings (Taichman *et al.*, 2016) ^[15]. In public health, data exchange plays an essential role in monitoring infectious disease outbreaks, as evidenced during the COVID-19 pandemic when rapid genomic data sharing enabled early detection and vaccine development (Kupferschmidt, 2021) ^[10]. In scientific research, international initiatives such as the Global Alliance

for Genomics and Health (GA4GH) have established frameworks for responsible genomic and health data sharing, balancing innovation with privacy (GA4GH, 2023) ^[5].

Despite these advances, concerns regarding data privacy, patient consent, and the risk of misuse remain persistent. These challenges highlight the importance of aligning medical data sharing practices with robust data protection standards.

2.3 International Cooperation

International frameworks play a pivotal role in setting standards for health data governance. The European Health Data Space (EHDS), adopted in 2025, represents a comprehensive regional initiative that facilitates secure data access for healthcare, research, and policymaking across the European Union (European Commission, 2025) ^[3]. At the global level, the World Health Organization (WHO) revised the International Health Regulations (IHR) in 2024 to strengthen information sharing during public health emergencies (WHO, 2024). In parallel, the Global Initiative on Sharing All Influenza Data (GISAID) has pioneered a model for transparent, rapid, and collaborative sharing of pathogen genomic data while ensuring attribution and recognition for data contributors (GISAID, 2023) ^[6].

These international efforts demonstrate that data sharing can be both secure and collaborative, provided that proper governance, accountability, and trust mechanisms are in place.

3. Methodology

3.1 Research Design

This study adopts a qualitative research design, emphasizing doctrinal legal analysis, comparative studies, and case-based examination. Qualitative approaches are particularly suitable for exploring emerging governance issues that cannot be easily quantified, such as the alignment of legal frameworks and ethical considerations in medical data sharing (Creswell & Poth, 2018) ^[2]. A comparative method is employed to analyze differences and similarities between ASEAN member states' personal data protection laws and international mechanisms, such as the GDPR and the European Health Data Space (EHDS).

3.2 Data Sources

The study relies on three categories of data sources:

- 1) Legal texts, including ASEAN-level frameworks such as the ASEAN Data Management Framework (ADMF) and Model Contractual Clauses (MCCs), as well as national data protection laws from Singapore, Thailand, Malaysia, Indonesia, the Philippines, Vietnam, and Brunei.
- 2) Policy documents, such as the OECD Recommendations on Health Data Governance (OECD, 2017), the World Health Organization's International Health Regulations (WHO, 2024), and the European Commission's EHDS Regulation (European Commission, 2025) ^[3].
- 3) Academic literature, consisting of peer-reviewed journal articles and scholarly reports addressing data protection, medical data sharing, and international governance (Taichman *et al.*, 2016; Kupferschmidt, 2021) ^[15, 10].
- 4) These sources together provide a comprehensive basis for analyzing both normative frameworks and practical challenges in data governance.

3.3 Conceptual Framework

The framework is structured around a three-layer model: legal, technological, and governance dimensions.

- 1. Legal dimension: Examines statutory provisions, regulatory requirements, and contractual mechanisms (e.g., SCCs and MCCs) that enable or restrict medical data sharing.
- 2. Technological dimension: Considers privacy-enhancing

technologies (PETs) such as differential privacy, federated learning, and secure multiparty computation, alongside interoperability standards like HL7 FHIR (Rieke *et al.*, 2020) ^[14].

- 3. Governance dimension: Focuses on institutional arrangements, accountability mechanisms, and multi-stakeholder cooperation, including the role of Data Access Committees (DACs) and ethics review boards.

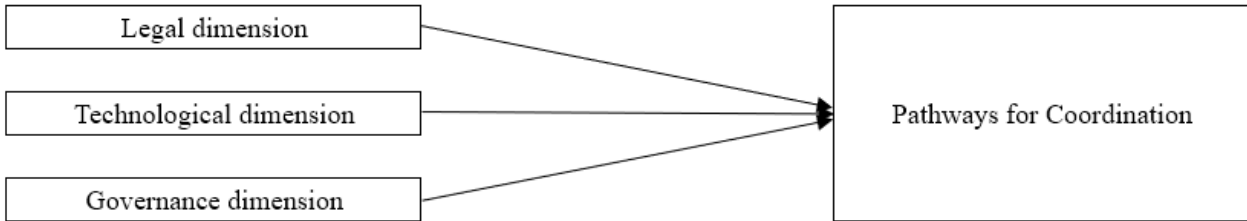


Fig 1: Conceptual Framework

By applying this three-layer framework, the study is able to integrate legal analysis with technical feasibility and governance effectiveness, thereby providing a holistic assessment of how ASEAN and international mechanisms can be coordinated.

4. ASEAN Data Protection Laws

4.1 ASEAN Regional Framework

At the regional level, ASEAN has developed voluntary frameworks to guide data governance. The ASEAN Data Management Framework (ADMF) provides baseline

principles for data governance within organizations, including accountability, security, and risk management. Meanwhile, the ASEAN Model Contractual Clauses (MCCs) offer standard templates for cross-border data transfers, designed to complement international contractual mechanisms such as the EU’s Standard Contractual Clauses (ASEAN Secretariat, 2021) ^[1]. Although non-binding, these frameworks promote regulatory interoperability among ASEAN member states and help address fragmentation in legal requirements.

Table 1: ASEAN Regional Frameworks for Data Governance

Framework	Year	Scope	Key Features	Legal Status
ASEAN Data Management Framework (ADMF)	2021	Organizational data governance across the lifecycle	Accountability, security, risk management; six foundational components	Non-binding (voluntary guidance)
ASEAN Model Contractual Clauses (MCCs)	2021	Standard clauses for cross-border transfers of personal data	Controller-to-processor & controller-to-controller modules; due diligence; onward transfer controls	Non-binding (voluntary templates)

Source: ASEAN Secretariat (2021) ^[1]

4.2 Country-Level Analysis

ASEAN member states have made significant progress in enacting personal data protection legislation:

- 1. **Singapore:** The Personal Data Protection Act (PDPA) regulates personal and sensitive data, with specific advisory guidelines for the healthcare sector (PDPC Singapore, 2023).
- 2. **Thailand:** The Personal Data Protection Act B.E. 2562 (2019), enforced in 2022, defines health data as sensitive and restricts its cross-border transfer without adequate safeguards (PDPC Thailand, 2022).
- 3. **Malaysia:** The Personal Data Protection (Amendment) Act 2024 introduces a risk-based approach for cross-border data transfers, replacing the earlier whitelist system (Government of Malaysia, 2024).

- 4. **Indonesia:** The Personal Data Protection Law No. 27/2022 (PDP Law) came into force in 2024, requiring compliance with strict consent and transfer requirements (Government of Indonesia, 2022) ^[8].
- 5. **Philippines:** The National Privacy Commission has issued updated guidelines on consent (2023) and promoted the use of privacy-enhancing technologies (NPC Philippines, 2024).
- 6. **Vietnam:** The Data Law 2024 (effective July 2025) consolidates provisions on data protection and digital governance (Government of Vietnam, 2024).
- 7. **Brunei:** The Personal Data Protection Order (PDPO) 2025 establishes a comprehensive legal framework for data protection, with phased implementation (Government of Brunei, 2025).

Table 2: ASEAN Country-Level Data Protection Laws (Health and Cross-Border Aspects)

Country	Primary Law / Instrument	Health Data Status	Cross-Border Transfer Mechanism	Sectoral / Health Guidance	Status / Effective Date
Singapore	Personal Data Protection Act (PDPA)	Sector-specific guidance for healthcare	Contractual safeguards & accountability-based regime	PDPC Advisory Guidelines for Healthcare Sector (2023)	PDPA in force; healthcare guidance revised Sept 2023

Thailand	Personal Data Protection Act B.E. 2562 (2019)	Health data defined as sensitive data	Adequacy or safeguards; cross-border rules issued Dec 2023	PDPC notices & general guidance	Enforced June 2022; transfer rules effective Dec 2023
Malaysia	Personal Data Protection (Amendment) Act 2024	Health data as sensitive data	Risk-based regime replaces whitelist	General PDPA + sectoral circulars	Amendments effective Apr 2025
Indonesia	Personal Data Protection Law No. 27/2022	Sensitive personal data	Adequacy/contractual safeguards; implementing regs pending	General PDP Law + sectoral rules	Two-year transition ended Oct 2024
Philippines	Data Privacy Act 2012; NPC Circular No. 2023-04 (Consent); NPC Advisory No. 2024-04 (AI & PETs)	Sensitive personal information	Contractual safeguards & lawful bases under DPA	NPC circulars; ethics board guidance	Consent Circular effective Nov 2023; AI Advisory issued Dec 2024
Vietnam	Law on Data 2024 (No. 60/2024/QH15)	General data governance (not limited to personal data)	To be clarified via decrees; interacts with Decree 13/2023	Sectoral rules + upcoming decrees	Effective Jul 2025
Brunei	Personal Data Protection Order (PDPO) 2025	Personal data protection applies; details via regulations	To be set by Ministerial regulations	To be confirmed	Enacted Jan 2025; phased implementation expected

Sources: National legal texts, PDPC Singapore (2023), PDPC Thailand (2022), Government of Malaysia (2024), Government of Indonesia (2022), NPC Philippines (2023–2024), Government of Vietnam (2024), Government of Brunei (2025)

4.3 International Medical Data Sharing Mechanisms

The international landscape demonstrates diverse but converging approaches:

1. OECD Recommendations: Emphasize accountability, interoperability, and safeguards for secondary use of health data (OECD, 2017).
2. WHO IHR (2024 revision): Strengthens obligations for timely information sharing during public health emergencies (WHO, 2024).
3. European Health Data Space (EHDS): Establishes a

4. Research Cooperation Frameworks: Initiatives such as GISAID (for pathogen genomic data) and the Global Alliance for Genomics and Health (GA4GH) (for genomic and health data sharing) showcase trust-based, multi-stakeholder governance models (GISAID, 2023; GA4GH, 2023) [5, 6].

Table 3: International Medical Data Sharing Mechanisms

Mechanism	Scope / Purpose	Key Obligations / Tenets	Relevance to ASEAN
OECD Recommendation on Health Data Governance (2016/2017)	Enable availability & secondary use of health data while ensuring privacy/security	National frameworks; interoperability; accountability; transparency	Blueprint for ASEAN code of conduct on health data
WHO International Health Regulations (IHR) – 2024 Amendments	Global instrument for surveillance & information sharing in public health emergencies	Notification duties; core capacities; event reporting; risk communication	Basis for ASEAN emergency fast-track data-sharing protocols
European Health Data Space (EHDS) – Regulation (EU) 2025/327	EU framework for primary & secondary use of electronic health data	Data access bodies; permits for secondary use; safeguards & de-identification	Model for ASEAN governance of secondary data use
GISAID	Rapid, collaborative pathogen genomic data sharing	Attribution; controlled access; rapid updates	Supports ASEAN genomic surveillance & pandemic response
Global Alliance for Genomics & Health (GA4GH)	Standards & policy for responsible genomic/health data sharing	Ethical framework; technical standards; grounded in UDHR Art. 27	Interoperability & ethics for ASEAN research networks

Sources: OECD (2017); WHO (2024); European Commission (2025); GISAID (2023); GA4GH (2023) [3, 6, 5]

4.4. Coordination Pathways

Based on the comparative findings, five coordination pathways are proposed:

1. Legal Harmonization. Develop “dual-track” contractual arrangements aligning ASEAN MCCs with EU SCCs, ensuring compliance with both regimes (ASEAN Secretariat, 2021; European Commission, 2025) [1, 3].
2. Regional Code of Conduct. Establish an ASEAN-specific code of conduct for health data sharing, modeled after OECD recommendations and EHDS provisions.
3. Technology and PETs. Promote adoption of federated learning, differential privacy, and HL7 FHIR standards to enable secure and interoperable data sharing (Rieke *et al.*, 2020) [14].

4. Public Health Emergencies. Create a “fast-track” data-sharing protocol under IHR provisions, supported by predefined Data Use Agreements and emergency exemptions.
5. Governance Models – Institutionalize Data Access Committees (DACs) and ethical review boards, supported by regional certification schemes such as the Global CBPR framework (Global CBPR Forum, 2022).

5. Conclusion and Discussion

This study demonstrates that effective coordination between ASEAN personal data protection laws and international medical data sharing mechanisms requires a multi-layered approach. While ASEAN has made significant progress

through regional frameworks such as the ADMF and MCCs, divergences among member states and gaps in harmonization with global standards remain. International models—such as the OECD recommendations, the European Health Data Space (EHDS), and the WHO International Health Regulations (IHR)—provide valuable lessons for strengthening ASEAN's governance capacity.

To bridge these gaps, the paper proposes five coordination pathways: 1) contractual harmonization through dual-track clauses, 2) development of an ASEAN health data code of conduct, 3) adoption of PETs and interoperability standards, 4) creation of emergency fast-track sharing protocols, and 5) establishment of robust governance models including Data Access Committees and ethical review boards.

By implementing these pathways, ASEAN could position itself as a trusted hub for secure and ethical medical data collaboration, contributing not only to regional integration but also to global health resilience.

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