



# MEDICINEXP Security Whitepaper

Building Trust in Healthcare Data Management

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***Version: 1.0***

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## 1. Introduction & Our Philosophy

At MEDICINEXP, we believe security is not a feature; it's the foundation. Built in Nepal for Nepali healthcare providers, our platform combines local understanding with global-grade technical architecture. We protect your sensitive data today while preparing your practice for tomorrow's compliance requirements.

### Our Dual Commitment:

- **Nepal-First:** Optimized performance, local support, and respect for domestic data sovereignty.
- **Global-Ready:** Architecture designed to meet international healthcare standards (HIPAA/GDPR) when needed.

## 2. Core Security Architecture

### 2.1 Region-Optimized Data Governance

- **Hosting:** Enterprise-grade AWS Asia Pacific infrastructure, optimized for low-latency access in Nepal.



from racks to receipts

- **Data Isolation:** Logical separation of each client's data using robust database partitioning and access controls.
- **Backup Strategy:** Daily encrypted backups with configurable retention policies (default: 30 days).
- **Data Ownership:** Clear contractual terms: your data remains exclusively yours. We process it only as your Data Processor.

## 2.2 Military-Grade Encryption

- **At Rest:** AES-256 encryption for all databases and file storage.
- **In Transit:** TLS 1.3 encryption for all client-server communications.
- **Key Management:** Secure, automated key rotation using AWS Key Management Service (KMS).
- **Sensitive Data:** End-to-end encryption for prescription details and patient health information.

## 2.3 Healthcare-Specific Access Controls

- **Role-Based Access Control (RBAC):** Pre-configured roles (Pharmacist, Cashier, Manager) with least-privilege permissions.
- **Session Management:** Configurable timeouts and device management.
- **Authentication:** Strong password policies with optional Multi-Factor Authentication (MFA).

## 2.4 Enterprise Infrastructure

- **High Availability:** Redundant systems across AWS Availability Zones.
- **Monitoring:** 24/7 security monitoring with automated alerting for anomalies.
- **Patching:** Regular security updates with minimal service disruption.
- **Disaster Recovery:** Documented Recovery Time Objective (RTO) < 4 hours and Recovery Point Objective (RPO) < 1 hour.

## 3. Compliance Framework

### 3.1 Current Nepal-First Implementation

- **Drugs Act, 2035 Alignment:** Features supporting prescription validation and audit trails as required by Nepali pharmacy regulations.
- **Data Act, 2079 Considerations:** Architecture designed with Nepal's evolving data protection principles in mind.
- **Local Data Residency:** Primary data storage within the AWS Asia Pacific (Mumbai) region for optimal Nepal performance.

### 3.2 Global Standards Preparation

- **Architectural Alignment:** Our platform's technical design incorporates recognized security best practices that form the basis of standards like HIPAA and GDPR.
- **Future Compliance Pathway:** We are establishing the necessary legal and procedural frameworks (including template agreements) to support future market expansion.
- **Deployment Flexibility:** The cloud-based architecture allows for configuration to meet specific regional requirements.

## 4. Operational Security

### 4.1 People & Processes

- **Employee Training:** All staff undergo security and privacy training annually.
- **Confidentiality Agreements:** Mandatory for all employees and contractors.
- **Vendor Management:** Sub-processors (AWS) selected for their enterprise security certifications.

### 4.2 Incident Response

- **Documented Procedures:** Clear steps for identification, containment, eradication, and recovery.
- **Breach Notification:** Commitment to notify affected clients within 72 hours of confirmed breach.
- **Continuous Improvement:** Post-incident reviews and process enhancements.

## 5. Shared Responsibility Model

MEDICINEXP Responsibility	Client Responsibility
<ul style="list-style-type: none"> <li>• Platform security &amp; availability</li> </ul>	<ul style="list-style-type: none"> <li>• Account credential protection</li> </ul>
<ul style="list-style-type: none"> <li>• Infrastructure protection</li> </ul>	<ul style="list-style-type: none"> <li>• User role assignment &amp; management</li> </ul>
<ul style="list-style-type: none"> <li>• Data encryption (at rest/in transit)</li> </ul>	<ul style="list-style-type: none"> <li>• Lawful data collection &amp; patient consent</li> </ul>
<ul style="list-style-type: none"> <li>• Security monitoring &amp; incident response</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance with healthcare regulations</li> </ul>
<ul style="list-style-type: none"> <li>• Backup integrity &amp; recovery</li> </ul>	<ul style="list-style-type: none"> <li>• Data accuracy &amp; quality</li> </ul>

## 6. Security Metrics & Commitments

- Availability: 99.5% uptime SLA
- Backup Retention: 30 days minimum
- Encryption: AES-256 (at rest), TLS 1.3 (in transit)
- Vulnerability Scanning: Weekly automated scans
- Penetration Testing: Annual third-party assessments

## 7. Continuous Improvement

Our security program evolves through:

- Regular third-party security assessments
- Continuous monitoring of emerging threats
- Annual policy and procedure reviews
- Client feedback incorporation

## 8. Contact & Resources

For Security Inquiries:

- General Support: [support@medicinexp.com](mailto:support@medicinexp.com)
- Security Inquiries: [security@medicinexp.com](mailto:security@medicinexp.com)
- Emergency: +977-981-0401522 (24/7 monitored)

Documentation & Compliance:

- Terms of Service: <https://medicinexp.com/terms>
- Privacy Policy: <https://medicinexp.com/privacy>
- GDPR/HIPAA Rights Portal: <https://medicinexp.com/privacy-requests>

Updates: This whitepaper is reviewed quarterly. Subscribe to security updates at <https://medicinexp.com/security-updates>

## Appendix: Technical Details

- **Primary Cloud Provider:** Amazon Web Services (AWS)
- **Hosting Region:** Asia Pacific (Mumbai) - ap-south-1
- **Core Encryption:**
  - **In Transit:** TLS 1.2/1.3
  - **At Rest:** Leverages AWS storage encryption capabilities.