

ANALYSIS OF ELECTRONIC MEDICAL RECORD (EMR) DATA SECURITY AT NUR HIDAYAH HOSPITAL IN 2026

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ABSTRACT

Background: *The security of Electronic Medical Records (EMR) data is crucial in the delivery of information technology-based healthcare services. At Nur Hidayah Hospital, various issues related to EMR data security were identified, covering six main aspects: confidentiality, integrity, availability, authentication, access control, and non-repudiation.*

Method: *A descriptive qualitative study. Data were collected through semi-structured interviews, direct observation, and document review involving 4 informants and 1 triangulation source at the Medical Records and IT Unit of Nur Hidayah Hospital.*

Results: *Confidentiality is weak because the password management system does not meet the character combination standard. Integrity is not optimal because the system only stores the last data change without a complete history. Availability has not been scheduled for data recovery testing, and incident disruptions have not been documented. Authentication has not implemented electronic signatures due to cost and regulatory constraints. Access control has role-based access control settings, automatic unauthorized access notifications, and evaluations that are not performed regularly. Non-repudiation has an incomplete audit trail because the system only records the last change.*

Conclusion: *The security of EMR data at Nur Hidayah Hospital based on Confidentiality, Integrity, Availability, Authentication, Access Control, and Non-Repudiation aspects is partially implemented but has not yet reached an optimal level. The most significant gaps include the absence of a formal data confidentiality SPO, insufficient password management standards, incomplete internal encryption, lack of electronic signatures for patients, inconsistent access control review, and an incomplete audit trail. Improvement efforts are needed across all six security aspects to ensure comprehensive and standardized data protection.*

Keywords: *Electronic Medical Record (EMR), Data Security, Confidentiality, Integrity, Availability, Authentication, Access Control, Non-Repudiation.*

ANALISIS KEAMANAN DATA REKAM MEDIS ELEKTRONIK (RME) DI RS NUR HIDAYAH TAHUN 2026

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ABSTRAK

Latar Belakang: Keamanan data Rekam Medis Elektronik (RME) merupakan hal yang krusial dalam penyelenggaraan pelayanan kesehatan berbasis teknologi informasi. Di RS Nur Hidayah, ditemukan berbagai permasalahan terkait keamanan data RME yang mencakup enam aspek utama, yaitu *Confidentiality*, *Integrity*, *Availability*, *Authentication*, *Access Control*, dan *Non-Repudiation*.

Tujuan: Mendeskripsikan keamanan data Rekam Medis Elektronik (RME) di RS Nur Hidayah Bantul Tahun 2026 berdasarkan aspek *Confidentiality*, *Integrity*, *Availability*, *Authentication*, *Access Control*, dan *Non-Repudiation*.

Metode: Penelitian deskriptif kualitatif. Data dikumpulkan melalui wawancara semi terstruktur, observasi langsung, dan studi dokumentasi terhadap 4 informan dan 1 triangulasi di Instalasi Rekam Medis dan Ruang IT RS Nur Hidayah.

Hasil: *Confidentiality* lemah karena manajemen *password* belum memenuhi standar kombinasi karakter. *Integrity* belum optimal karena sistem hanya menyimpan perubahan data terakhir tanpa riwayat lengkap. *Availability* belum terjadwal untuk uji pemulihan data dan insiden gangguan belum terdokumentasi. *Authentication* belum menerapkan tanda tangan elektronik akibat kendala biaya dan regulasi. *Access Control* memiliki pengaturan hak akses berbasis peran, sudah terdapat notifikasi otomatis akses tidak berwenang dan evaluasi belum dilakukan secara rutin. *Non-Repudiation* memiliki audit trail yang belum lengkap karena sistem hanya mencatat perubahan terakhir.

Kesimpulan: Keamanan data RME di RS Nur Hidayah berdasarkan aspek *Confidentiality*, *Integrity*, *Availability*, *Authentication*, *Access Control*, dan *Non-Repudiation* telah sebagian diterapkan, namun belum optimal. Kelemahan utama meliputi belum adanya SPO kerahasiaan data secara formal, manajemen *password* yang belum memenuhi standar, enkripsi internal yang belum menyeluruh, tanda tangan elektronik pasien yang belum diterapkan, evaluasi hak akses yang belum konsisten, serta audit trail yang belum mencatat riwayat perubahan secara lengkap. Perbaikan menyeluruh pada keenam aspek keamanan diperlukan untuk menjamin perlindungan data yang komprehensif dan terstandarisasi.

Kata Kunci: Rekam Medis Elektronik (RME), Keamanan Data, *Confidentiality*, *Integrity*, *Availability*, *Authentication*, *Access Control*, *Non-Repudiation*.