Title of the Project: Smart Patient Security System

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**ABSTRACT:**

The project **“SMART PATIENT DATA SECURITY SYSTEM”** In the age of digital healthcare, the transition to Electronic Health Records (EHRs) has introduced critical concerns regarding the confidentiality and integrity of sensitive patient data. Traditional data storage methods are vulnerable to unauthorized access, internal misuse, and crippling data breaches. This project addresses this pressing security gap by developing a robust, multi- layered Smart Patient Data Security System designed to ensure the secure storage and controlled access of medical information.

1. Advanced Encryption: Utilizing robust cryptographic algorithms (e.g., AES) to ensure all medical records are encrypted at rest, rendering data useless to external attackers.
2. Role-Based Access Control (RBAC): Restricting user access based strictly on their predefined role (e.g., Doctor, Patient, Administrator), thereby enforcing the "need-to-know" principle and minimizing internal security risks.
3. Comprehensive Auditing: Maintaining a tamper-proof, chronological Audit Log of every data access or modification attempt, ensuring full transparency and accountability for regulatory compliance.

The system significantly enhances patient privacy, builds patient trust in digital health services, and ensures compliance with stringent data protection standards By fortifying the digital infrastructure of healthcare, this project directly supports global goals, specifically aligning with SDG 3 (Good Health and Well-being) and SDG 16 (Justice and Strong Institutions), demonstrating its impact beyond technical implementation. The

successful development of this system provides a necessary blueprint for secure, trustworthy digital healthcare management.