



CASE STUDY

Paperless Transformation of a Healthcare Institution Using emSigner

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eMudhra helps a healthcare institution go paperless and streamline critical processes with ease.

Industry

Healthcare

Business Matters

One of the largest healthcare brands in India having international presence goes completely paperless by signing consent forms, pathological test reports, cash memos from chemist, etc., using emSigner's Digital Signature and Workflow capabilities and integrating it with the hospital's existing Hospital Information System (HIS).

Business Needs

Hospital wanted to streamline their patient on-boarding and discharge process so as to reduce time spent by patients in doing paper-based formalities. This was achieved by eliminating manual paper-based processes using a digital solution that allowed all the stakeholders to sign digitally.

Approach

Deploy an integrated solution to digitally sign and encrypt documents that are legally binding and ensure authenticity, integrity and confidentiality of data.

The company should be able to use emSigner to facilitate multi-party and real-time signing of documents such as discharge summary, cash memos from hospitals/chemists, pathological test report, certificate stating nature of operation performed, etc. In a phased manner the organisation would integrate all of their internal as well as external applications with emSigner to expedite the signing of documents.

**Background**

The hospital was struggling under the immense load of papers. They had to maintain a multitude of documents such as consent form, certificate from attending medical practitioner, cash memos from the chemist, surgeon certificate stating nature of operation, pathological test report, etc., manually signed in the physical form for each patient.

The convoluted, time-consuming, error-prone and paper intensive health insurance claim process along with equally lengthy, cumbersome and paper intensive patient admission and discharge process was adding to this load.

eMudhra outlined the following key areas where emSigner could significantly improve and streamline document workflows with respect to Hospital Information System:

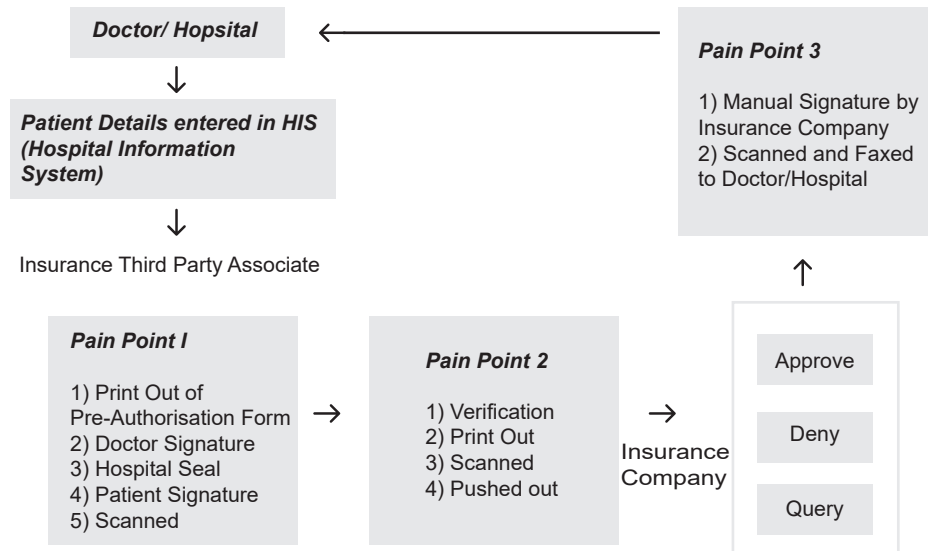
- Doctors would be able to sign preauthorization form digitally and same would be forwarded directly to third party insurance associates
- The hospital would be able to encrypt and decrypt sensitive documents such as patient's medical records, sexual orientation, physical, psychological and mental health condition, etc., as required under electronic Protected Health Information (ePHI) using eVault service
- emSigner would be integrated with Hospital Information System using Web Services APIs
- The hospital would be able to send digitally signed documents and reports as necessitated by insurance companies in a smooth and efficient manner. This will lead to faster claim settlement
- Digitally signed documents would be instantly archived and retrieved as and when required. This would prevent manual intervention and misplacement of documents

Digital Signature Technology

The Digital Signature Technology works on the Public Key Infrastructure framework which uses a Cryptographic Key Pair — Private and Public Key— for secure access and transmission of Information.

Digital Signatures is generated by the issuer for the client in a secure manner.

The following flowchart depicts pain points of cashless but paper intensive claim process



Benefits

The Hospital reaped in significant benefits by implementing digital signature based workflow signing.

These includes:

- Faster insurance claim processing
- Better visibility and accessibility of documents for patients
- Legal non-repudiation thereby reducing frauds
- Signing and approving documents anywhere, anytime
- Faster turnaround time, increased employee efficiency, productivity and transparency
- Meeting compliance & regulatory requirements
- Online and offline signing capabilities
- Importing files from multiple cloud and file storage services like Dropbox, Google drive, etc., into emSigner
- Tracking real-time signature progress on documents initiated for signing

Solution

eMudhra implemented emSigner — Secure Paperless Office solution — to enable Digital Signature based approvals for the following workflows:

- External flows for patient admission & discharge
- Internal flows between finance and billing department
- Bulk signing of documents for sending monthly bills and payment reminders

emSigner was integrated with the ERP application over Web Services API for digital signing of documents.

Deployment was done on-premise, which allowed company greater degree of control and customization and allowed the company to retain data on-premise for confidentiality purposes.

- For individual signing, individual digital signature certificates were issued to Authorized Signatories
- For Bulk Signing, Class 3 Document Signer Certificate was used, which gave a higher risk assurance to relying parties for a critical use case such as Invoice Signing
- From a security and risk standpoint, a Hardware Security Module was used to store the Class 3 Document Signer certificate

The paperless office solution uses the following broad modules:

- **emSigner:** On-premise Digital Signature enabled workflow management solution used for defining paperless workflows
- **Hardware Security Module:** Protect the cryptographic infrastructure of some of the most security-conscious organizations in the world by securely managing, processing, and storing cryptographic keys inside a hardened, tamper-resistant device
- **Class 3 Document Signer Certificate:** To sign critical documents such as invoices
- **emAS:** eeMudhra authentication server was used to automatically validate the signed documents that was received by the organization

About eMudhra:

Much like the name, which is an embodiment of the seal of authenticity in the electronic or digital world, eMudhra is a cyber security solutions company and a trust service provider that is focused on accelerating the world's transition to a secure integrated digital society. With presence in 5 continents and a global delivery center in Bengaluru, India, eMudhra is empowering secure digital transformation of over 45 global banks, several Fortune 100 customers and thousands of SMEs.

