

HL7 & FHIR Based Integration between EHR and Pharmacy Systems



Harbinger helped a US based EHR product company with pharmacy integrations using HL7 and FHIR standards

About

The US based cloud EHR company provides electronic health record systems for hospitals, clinics. It delivers an integrated system to take care of clinical, billing, and administrative features. The product helps hospitals and healthcare facilities to adapt to digital health records, automate clinical workflows, billing processes to achieve improved patient care, and reduce healthcare costs.

Lack of Integration – EHR and Other Platforms

An EHR system is a comprehensive solution that takes care of most of the functions falling under patient care. However, hospitals, clinics, and practices need the flexibility to integrate such EHR systems with several external systems. This customer of Harbinger wanted to enable integration between their cloud-based EHR system with the following systems:

- Inpatient Pharmacy (including Pyxis integration – an automated medication dispensing system that supports decentralized medication management)
- Outpatient Pharmacy – electronic prescription to an external pharmacy
- FDB – First Databank for decision support on Drug-Disease Contraindications, Drug-Drug Interaction, Drug-Food Interaction, Drug-Allergy Interaction, Therapeutic Duplication Intervention, Drug Dose Check

Before this integration, all these processes were completed manually, making those time-consuming, error-prone, adding up to healthcare costs for a patient and the hospital.

Harbinger Solution

Harbinger architected and developed an interoperability solution for the customer's EHR platform in the following way:

- Harbinger started with CPOE (Computerized Physician Order Entry) module as all pharmacy related requests start from here. After each med and infusion order is signed, the system populates the order information in the CPOE module. HL7 and FHIR standards were finalized to be used with the HAPI framework.
- External applications to be integrated were:
 - Pyxis integration for Inpatient Pharmacy
 - Outpatient Pharmacy
 - FDB – First Databank
- The next step was to integrate the customer's EHR with an external pharmacy. For this, Harbinger's technical teams worked with the Pharmacy vendor's team to recognize project scopes, healthcare standards, and understand the specifications to be implemented. This includes exploring and learning the external application specifications and identifying gaps.

Various integration engines were studied and analyzed based on parameters like security, support to compliance platform, licensing model and cost, etc.

Based on the analysis done, the Mirth engine was chosen for integration because it is an open Source, Java-based product with a wide range of Healthcare support. Also, it perfectly fit into the customer's budget.

- **Selection of HL7 and FHIR to be used with HAPI**
- **Integration specifications study with three systems**
- **Mirth Integration engine selected for its open source, security, compliance, and cost options**

Benefits

- The Pyxis integration for Inpatient Pharmacy helped to automate the medication dispensing process
- The Outpatient Pharmacy integration allowed EHR customers to connect immediately with an external pharmacy and get the required medicine without much hassle
- The First Databank (FDB) integration helped physicians and nurses to make better decisions w.r.t drug dosages, any Drug-Disease Contraindications, and Drug-Food Interactions which ultimately helped them with better patient care

Wish to know more?
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