

Case Study

Top Healthcare Software Developer Creates Interoperable Portal to Help Physicians Make Timely, Informed Decisions for Patient Care

emids helps leading developer of healthcare engagement tools for providers integrate clinical data from disparate systems into a comprehensive patient record

Overview

The client is a provider of the healthcare industry's most comprehensive suite of consumer experience platforms. Its integrated software is used by payers and providers to positively impact consumer decision-making and health behaviors beyond the care setting through personalized, interactive engagement across multiple channels. Its products include a healthcare customer relationship management system, an enterprise health content management system, an enterprise patient portal and comprehensive care management technology. The company has helped more than 1,100 provider organizations influence consumers in a way that transforms financial and quality of care outcomes.

they need to make faster, more informed decisions about how to diagnose and treat individual patients. One of the selling points of the platform is its single sign-in that allows physicians to log into the portal and obtain a secure, comprehensive and real-time view of a patient's health records, including information on allergies, medications, past hospitalizations, blood banks and more.

To retrieve this data, which is geographically dispersed between multiple electronic health records (EHRs), laboratory systems and other backend systems, and provide physicians with a unified view of the disparate information, the client needed to integrate patient records in the portal with more than 30 HIS systems.

Business Opportunity

One of the client's signature products is a web-based clinical portal used by physicians to access vital patient information stored across disparate, federated health information systems. Timely access to this data provides physicians with the insight

The multiple integration points and EHRs vendors that existed across these systems complicated this process, hampering the free flow of information and resulting in inconsistencies in the data exchanged. This caused patient records to be marred by missing data, duplicate records, gaps in treatment plans and inaccuracies—all of which had the potential to put patients at even greater risk if not corrected.

Solution

In 2015, the client enlisted emids' help to solve these integration-related challenges. We brought broad clinical and technical expertise to the engagement, including knowledge in:

- Clinical systems and applications architecture
- Data quality and governance
- Master data management
- Interface architecture, including standards-based frameworks such as HL7 and FHIR
- Semantic interoperability

We conducted an in-depth study of the databases, schemas and data semantics used by the two primary EHR systems used—to deepen our understanding how to extract data from these systems. Then we built customized connectivity adapters for each HIS system, which included lab, pharmacy, radiology, transcription, imaging and admissions systems, to aggregate, normalize and harmonize clinical and patient data flowing between each source system and the portal. Adapters were both batch and real-time as well as bi-directional, sending out data as JSON and XML.

Interface engines, built on a Java/Spring/Hibernate framework that could be quickly configured and extended, provided secure exchange points between adapters, routing data back and forth between each HIS system and the portal as indicated in *Figure 1*.

Technologies Used

- Java
- Spring
- Hibernate
- MySQL
- Tomcat
- Mirth Connect 3.2

Results

Our solution enabled the secure and meaningful exchange of clinical and patient data between external HIS systems and the physician portal, minimizing inconsistencies and errors in the patient records retrieved.

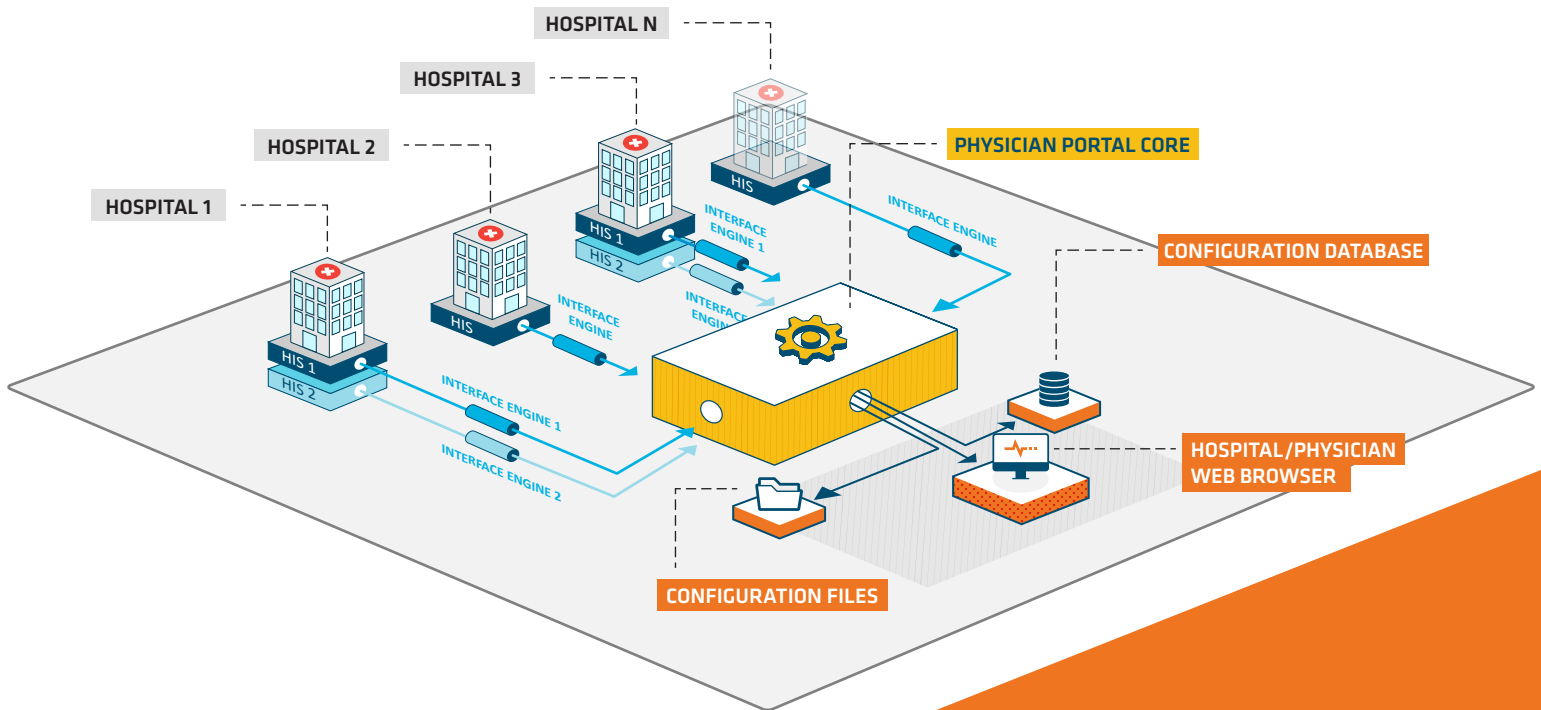
Our work on this project also helped the client deliver on their promise of providing physicians with a comprehensive, longitudinal view of their patient's medical history in one screen and provide the client's customers with a clinical decision support system that helps them deliver the most effective, timely care for patients.

Benefits

20,000-100,000 
PATIENT RECORDS
 processed without any issues

PROCESSED 9,000
PATIENT RECORDS
IN 60 SECONDS
 at peak throughput

Figure 1: emids Clinical Data Integration Solution



About emids

emids is a premier provider of healthcare IT services and solutions. emids enables healthcare entities to achieve accessible, affordable and high-quality care by providing custom application and data solutions. Our clients experience true partnership with us as together we navigate the challenges of a rapidly changing healthcare industry.

Contact Us

Online: www.emids.com Email: info@emids.com