Designing and Integrating Medical Records Services for a Clinical Facility

The client is a USA (Princeton) based health care provider who is specialist in providing Health-care services in gastroenterology. The client has more than 25 years of practice in his chosen field of work. The USA as a country practices high standards in health care services and thus in clinical data maintaining activity. Therefore it is critical to know, understand, maintain and process complex clinical activity data. Also all practices and recording services are needed to adhere to norms like HIPPA, CCHIT etc.

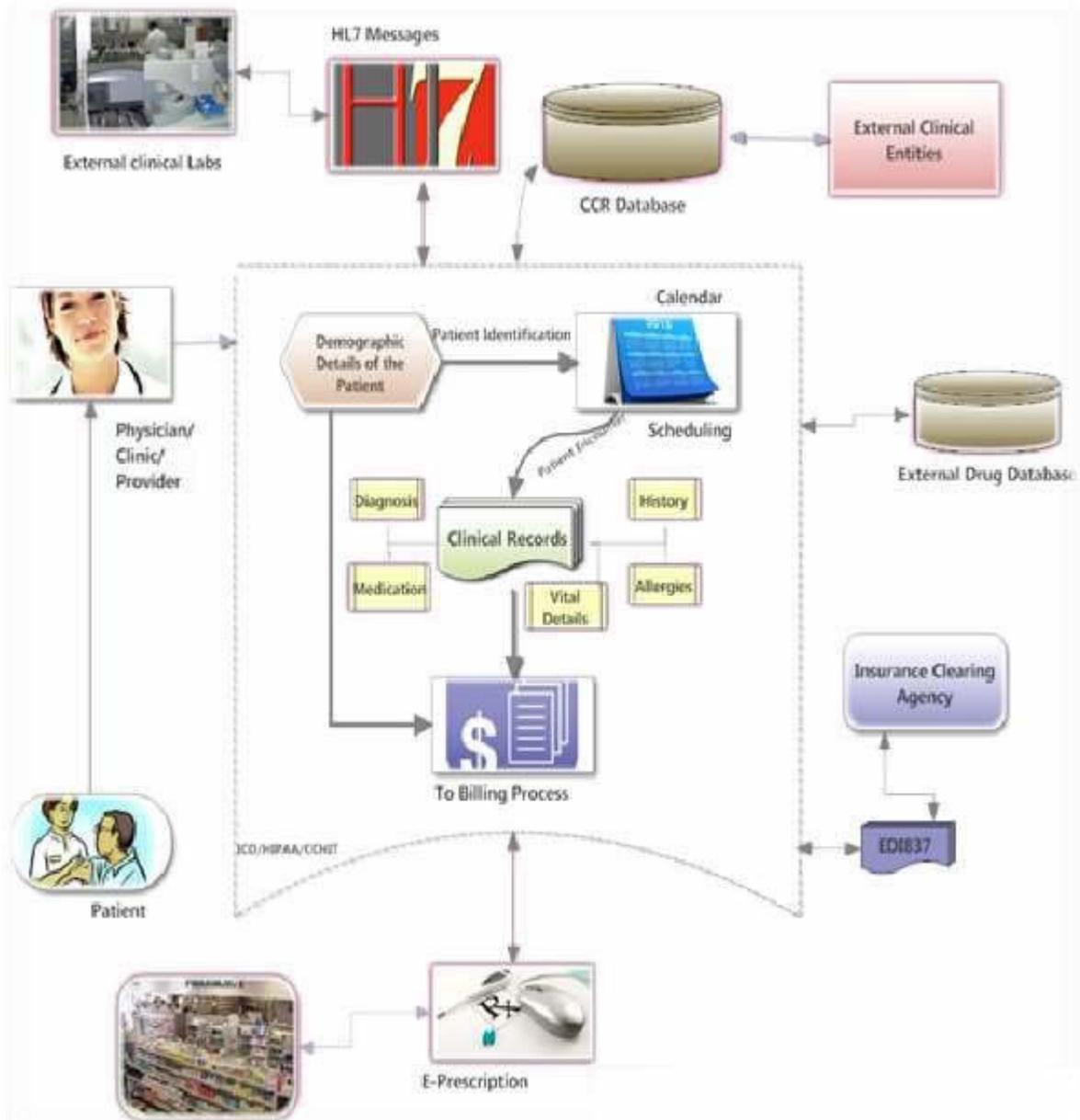### Key Business Requirements:

The application of such a process involves both designing and integrating complex sub-processes. The designing involved two parts. First to design a system to maintain detailed reports of visits, re-visits, schedules and encounters of the patients. Second to design a electronic medical record (EMR) system which will store diagnosis report after patient encounter and then process it accordingly to independent billing system.

Also due to highly sensitive nature of the data, it's critically important to maintain strict secured data flow.

The process also involved synchronization and integration with following external systems:

- To communicate to and fro with clinical laboratories via HL7 messaging format.
- To communicate to and fro with external drug database to felicitate right kind of prescription.
- To process the drug prescription to selected pharmacies via e-prescription.
- To communicate to and fro with service provider of insurance services for billing via standard EDI format.
- Also to communicate to and fro with any external clinical system with respect to further diagnosis of client, if necessary.

Functional Architecture:

The Net808Source Effort:

The Net808Source process aims at an electronic medical record's facility which will help the client to address his specific needs. The program will allow storage and multiple usages of demographic details of patients which are visiting the clinic. The program will help to schedule an encounter of the patient with facilitator and will append data of each encounter to client file, to process the same to billing.

The program focuses on integrating the diagnosis done to selected pharmacist in standard ICD format. Also the medical reports to be exchanged with variety of registered clinical labs in HL7 format. The external drug database is to be integrated with the application to facilitate the physician with reference of exact drug in accordance with his diagnosis. Also the physician may have/ need to give reference of the client to external clinical facility. Therefore the program must also aim to synchronize data between two clinics, which is to be done in CCR format.

Finally integrating all this information with final billing , the same needed to be processed for payment to insurance service provider in standard EDI format adhering HIPPA/CCHIT norms, for payment process initiation.

The Net808Source Delivery:

Net808Source implemented following important components in the process:

Client demographic details, Lab interface, e-prescription integration (E-Rx), HL7 messaging, client alerts and scheduling, CCR database integrity for communication with external clinical facilities, connect with external drug database and finally connect with insurance service provider in standard EDI format.

Team Net808Source also successfully integrated inter-connectivity of these processes.

All required data security norms in the data flow process, were also successfully implemented.

Technical Platforms:

IIS, ASP.NET, VB.NET and SQL 2005. Telerik, PDF generator (Winnovative), HL7 parser.