DESIGN OF SEMANTIC ELECTRONIC MEDICAL RECORD (SEMR) SYSTEM AS SAAS SERVICE MODEL FOR EFFICIENT HEALTHCARE

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Healthcare Domain

- Two problems in healthcare domain are to manage

Large Scale Data

Technological Infrastructure
Solution

Semantic Web

Cloud Computing
Benefits

• Semantic Technologies
  • Automation
  • Seamless Communication

• Cloud Computing
  • Reduced Cost
  • Increased Storage
  • High Automation
  • Flexibility
  • Mobility
Semantic EMR

- healthcare domain focus is on providing semantic based medical record system for timely patient order entry for healthcare and patient satisfaction for the whole clinical practice

- The proposed system SEMR (Semantic Electronic Medical Record) system will provide the solution
  - highly intensive patient and medical data sharing,
  - semantic interoperability and management with its availability for larger community access through cloud infrastructure.
Architecture for SaaS based SEMR system
Elaborated Service Architecture

EMR Business Process Services
- Semantic Gateway
  - Semantic Composition
- Referral
- Billing
- Reporting
- Scheduling
- Lab Management
- Patient Administrative
- Insurance

EMR Data Management Services
- Database Mapping
- Billing Data
- Scheduling Data
- Message Parsing
- Patient Data
- Laboratory Data
- Message Generation

EMR Metadata Services
- OpenEHR
- HL7 (CDA & Messaging)

EMR Security Services
- Authorization
- Authentication
Semantic Gateway

![Semantic Gateway Diagram]

Diagram showing the components of a Semantic Gateway:
- Discovery
- Ranking
- Parser
- Selection
- Choreography
- Reasoner
- Service Repository
- Ontology Repository
- Ontologies
  - Domain
  - Service
Conclusion

- EMR systems have problems
  - managing large scale medical data
  - patient records
  - technological infrastructure

- Solution is
  - automated semantic web health services on cloud
Thanks!!!