Title: medCafe: Connecting EHR Systems through Composable Patient Records

Summary:

Demonstrate how a composable system using a flexible, extensible, open design can give a clinician access to just the right resources, data and tools for each patient.

Objectives:

1. Describe the composable approach and provide an overview of why it provides clinicians with a more efficient interface to EMRs.

2. Describe the basic tenets of this approach by detailing the different principles involved, and how the emphasis on user interaction can provide clinicians with the right tools and right resources

3. Demonstrate how this approach allows a user to quickly build their personal patient interaction record using pre-defined templates and the ability to modify and save them.

4. Demonstrate how, using this design, users can connect seamlessly to multiple patient record repositories.

5. Explain, using the VA as a case study, why this approach could improve meaningful use of EHRs, through improving the clinician workflow, increasing efficiency and streamlining the process for dealing with non traditional data sources.

Detailed Description:

Imagine you could look at a patient’s complete health history, visualized as a time-line, or could flip through, online, a patient’s recently completed lab reports. Imagine you could retrieve health data from multiple systems. Imagine envisioning a powerful new capability and being able to add it to your current system. We will demonstrate how to achieve these goals using medCafe: a software framework that allows a completely composable view of a patient’s medical record.

medCafe is a composable software framework that allows a user to build a personal view of a patient record using a set of tools called components. Each component has simple but separable functionality. By isolating each component’s capability, a component can be added or removed from the system without impacting the functionality of the system as a whole. This means, medCafe provides the flexibility to adapt to a health care professional’s immediate needs and may, in fact, be used by a wide range of users from clinicians to technicians to the patients themselves.

The advantage of this composable approach is that it promotes flexibility and adaptability. New components can be built and added quickly to existing medCafe systems. However, this flexibility means that upfront design of this system requires far greater level of effort than more traditional EHR systems.

The system design is based on the following principles:

* Each component provides a simple to use interface for some set of patient data, such as patient medications.
* Each component operates independently of other components.
* All communication to/ from these components takes places through an emerging HL7 data standard.
* New components can be added or removed at will and the resulting view of the patient can be saved as a template allowing for quick re-acquisition of patient data. This new template can then be shared with other users for use in building their own patient views.
* A set of patient views called templates can be pre-defined and packaged with medCafe. This will allow the clinician to quickly access exactly the information he needs for commonly encountered patient circumstances.

However customization means the clinician can adapt these views as required.

Multiple systems can be connected simultaneously to medCafe, providing a seamless interface to all accessible patient records. We currently connect to an open source version of VISTA called OpenVISTA, and plan to allow for connecting of any system using HL7 C32 data standard.

To encourage adaption and experimentation with this approach, our prototype system will be released under a business-friendly open source license. This will enable any vendor to pursue this composable approach as well as incorporate new functionality, thereby allowing health care providers to select a ‘best of breed’ toolset across vendor offerings to compose their ideal functionality. An end goal of this design is to allow for any technically skilled person to build a component and integrate with the existing system with little effort.

MITRE is currently partnering with a physician from the VA to develop a realistic set of base use cases for use in demonstrating the effectiveness of this approach. We are also focusing on other problem areas such as improving display and discovery of information in non-integrated data sources, such as PDF images.