Academic Paper : Medcards

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***Abstract*—**Medical practitioners now-a-days have access to a lot of patient data and electronic medical records. This project is about a Medcards application which can be used by medical practitioners to improve their time with patients. The application abstracts relevant information from the vast medical data available to the healthcare providers.

1 BACKGROUND & SIGNIFICANCE

Physicians time with patients is very valuable. Due to the amount of information that Physicians have to peruse before checking on a patient, the actual amount of time they spend with a patient is limited. This can also be attributed due to documentation overload that healthcare professionals need to review before checking on patients. Instead, if the required information is provided in a concise and easy to read format, it will save time in the document review process and the healthcare provider can spend more time with the patient.

Our approach is to create a Medcards application which can access the patient's data from the FHIR repository and display important attributes of the patient's medical records in an easy to consume format. This application can display patient's active conditions on the default page and inactive conditions in subsequent pages so medical professionals can review the most important information first and go on to other data as needed.

We believe this is a powerful representation of data and can help the medical community and patients to focus on important things than reviewing documents.

2 PROBLEM

Based on a research study published in Acpjournals[1], Physicians spend an average of 16 mins per patient encounter on documentation. The amount of EHR data that needs to be reviewed limits the Physicians ability to focus on other important activities. This is a problem that can be addressed by technology.

3 SOLUTION

Our application understands the FHIR data model, extracts relevant patient information from a FHIR repository and displays it in a concise manner. This provides the Physicians with all important patient medical information first as a medical card and any other information in the form of medical cards which are easy to consume.

4 COMPLEXITY OR EFFORT

Our solution is based on Smart on FHIR architecture. We used Node.JS and Angular to build the application. It's hosted on Amazon S3 for high availability. We used Synthea patient data to populate sample FHIR data that the application uses to demonstrate its functionality.

We also built a HAPI FHIR server on Azure for testing data ingestion and extraction functionality testing.

4 REFERENCES

1. Overhage, J. Marc, et al. "Physician Time Spent Using the Electronic Health Record During Outpatient Encounters." *Annals of Internal Medicine*, www.acpjournals.org/doi/10.7326/M18-3684.

[1] Here are instructions for Microsoft Word, Apple Pages, and Google Docs.