**Letter of Inquiry: Alfred P. Sloan Foundation**

The primary purpose of the open-source LibreHealth Educational Electronic Health Record (EHR) Project is to provide hands-on EHR experience for clinical and non-clinical college students and faculty. [1] This will enhance education for clinical (medical, nursing and pharmacy) students, as well as non-clinical (health sciences, health informatics and health information management students). In addition to EHR training, experience with a fully populated and functional EHR will teach pathophysiology, epidemiology, and data analytics.

Approximately two thirds of non-clinical students have no access to an electronic health record, despite its widespread adoption. [2] Commercial EHR vendors do not permit access to their EHR unless the student belongs to a large healthcare organization that uses that EHR. Clinical students need a training platform and non-clinical students need exposure to health data for educational and research purposes. In 2017, approximately 9600 patients and data related to demographics, vital signs, medications, labs and diagnoses were uploaded into the LibreHealth EHR. The data was derived from the 2011-2012 National Health and Nutrition Evaluation Survey (NHANES). [3] In September 2017, three universities beta tested this platform and the results of the faculty and student surveys will be available at these links. [4]

Funding is being requested to further enhance LibreHealth EHR software to optimize the educational and research experience. Examples of enhancements include:

* Adding patient encounter notes so natural language processing (NLP) programs can analyze unstructured EHR data. [5]
* Finalizing the open application programming interface (API) so that additional software programs can be developed to interface with the EHR. [6] This would require a separate FHIR server. [7]
* Adding synthetic patients using Synthea™ patient generator that will permit longitudinal follow-up of these patients. [8]

The Software Freedom Conservancy (SFC) is requesting $45,000 from the Sloan Foundation for software development. The final software will be available on GitHub for public download.

The anticipated duration of the project is February 1, 2018 to February 1, 2019

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**References:**

[1] LibreHealth EHR <https://librehealth.io/projects/lh-ehr>

[2] Convenience Survey 2016. <https://docs.google.com/presentation/d/18iTA56PfZF4XmPx7PzxANJJmeLqTAAk8GWHkknZuu3I/edit#slide=id.p6>

[3] National Health and Nutrition Examination Survey. <https://www.cdc.gov/nchs/nhanes/index.htm>

[4] Zoho Survey. Nov-Dec 2017. Faculty: <https://survey.zoho.com/survey/result.do?surveyid=323812000000002007&portalid=658130855&zsgid=ShB5eR> Students: <https://survey.zoho.com/survey/result.do?surveyid=323812000000002153&portalid=658130855&zsgid=ShB5eR>

[5] NLP: Tapping into EHR text fields <https://www.prometheusresearch.com/nlp-tapping-into-ehr-text-fields/>

[6] SMART. An app platform for healthcare. <https://smarthealthit.org>

[7] Fast Healthcare Interoperability Resources (FHIR). <https://hl7.org/fhir/summary.html>

[8] Synthea™. <https://syntheticmass.mitre.org/about.html>