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SETTING THE WORLD ON FHIR®

Published by HL7®, an international not-for-profit organization, Fast Healthcare Interoperability Resources (FHIR®) is a standard for exchanging healthcare information electronically.

A series of case studies illuminating how HIT professionals are using HL7®FHIR® to improve and advance modern healthcare

CASE STUDY

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UNIVERSITY OF UTAH - HUNTSMAN CANCER INSTITUTE

University of Utah's Department of Biomedical Informatics in Salt Lake City, Utah, USA, has 50 years of history exploring the underlying science of designing and implementing decision support systems that provide cognitive support for clinicians. It is a national leader in the development and implementation of standards-based tools that integrate smart algorithms and interfaces into vendor electronic health record (EHR) systems. The University of Utah Huntsman Cancer Institute is a nationally recognized research center and treatment hospital serving patients with all types of cancer, and it is the only National Cancer Institute-Designated Comprehensive Cancer Center in the Mountain West.

Goal

- To use existing data within EHRs to develop improved cancer screening strategies for better population health management

Opportunity

- To enable and pilot a standards-based clinical decision support (CDS) platform for identifying appropriate candidates who meet guidelines for genetic evaluation of hereditary cancer based on family health history (FHH)

Individuals at higher risk for cancer may benefit from enhanced cancer screening and risk reduction strategies.

— Wendy Kohlmann, MS, genetic counselor, Huntsman Cancer Institute, adj. assistant professor of Population Health Sciences, University of Utah

Project

Current guidelines support tailoring screening recommendations based on personal cancer risk. Family history is one of the most valuable pieces of information for estimating cancer risk, and for determining eligibility for hereditary cancer testing. For people with a concerning family history, genetic testing is an important tool.

Effective interventions are needed to identify patients who meet the criteria for genetic testing for hereditary cancer without overburdening the primary care environment.

A pilot study of a CDS platform integrated with the Epic EHR was conducted with University of Utah Health and Huntsman Cancer Institute.

Content based on a report published by JCO Clinical Cancer Informatics, an American Society of Clinical Oncology Journal. https://ascopubs.org/doi/10.1200/CCI.19.00120

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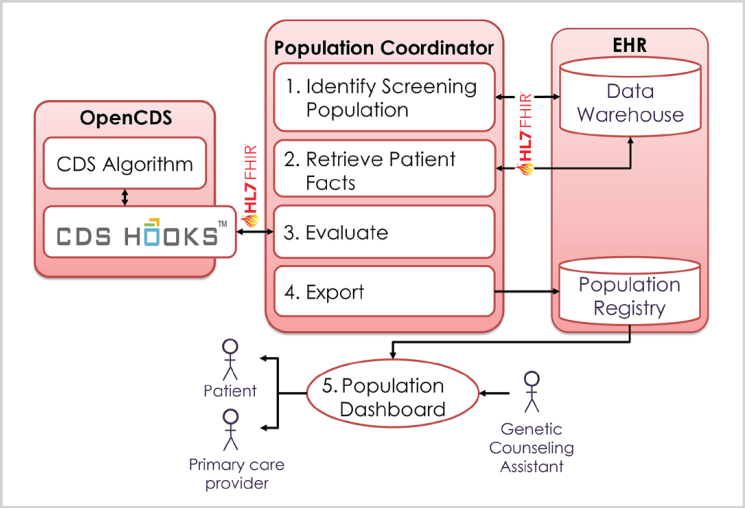
The platform was developed based on a population health management approach that leverages FHH information already available in the EHR to enable genetic counseling teams to identify patients who met 2018 National Comprehensive Cancer Network guidelines for genetic evaluation of hereditary breast and colorectal cancer.

HL7® FHIR® standards were used to interface with different EHR systems.



Results

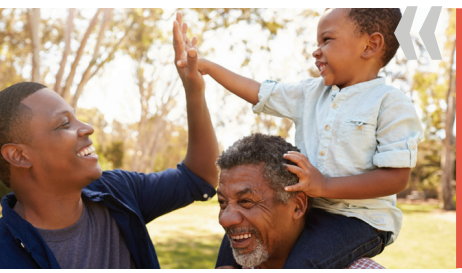
Against a target population of 143,012 patients, 5,245 (3.7%) met the criteria for genetic evaluation based on FHH data recorded in the EHR. In a clinical pilot study, genetic counselors attempted to reach 71 of the patients. Of those:

- 25 (35%) scheduled an appointment
- 10 (14%) declined
- 7 (10%) said they would consider it in the future
- 2 (3%) did not need genetic counseling
- 27 (38%) were unreachable

In this pilot, 13 (52%) of the scheduled patients completed visits, and 2 (15%) of those were found to have pathogenic variants in cancer predisposition genes.

Using HL7® FHIR® enabled EHR technologies coupled with CDS tools could serve as a national model for population-based identification, outreach, and tracking of patients who may benefit from genetic evaluation of risk for hereditary cancer and personalized cancer screening.

Integration has been established with Epic at New York University (NYU) and is underway with Cerner at Intermountain Healthcare.



A standards-based CDS platform integrated with EHR systems is a promising population-based approach to identify appropriate candidates for genetic evaluation of hereditary cancers.

— Guilherme Del Fiol, MD, PhD, vice-chair of research and associate professor of Biomedical Informatics, University of Utah

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