

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

BETH ISRAEL DEACONESS MEDICAL CENTER

Beth Israel Deaconess Medical Center (BIDMC) is a world-class teaching hospital of Harvard Medical School located in Boston, Massachusetts, USA. Its mission is to expand access to care and advance the science and practice of medicine through research and education, using the finest and the latest technologies.

Goal

- To engage patients to manage their own chronic conditions to reduce both hospital readmission rates and expensive high-intensity care

Opportunity

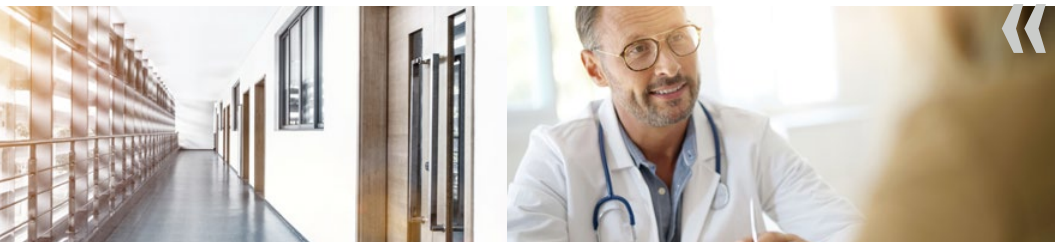
- To develop a secure mobile application called BIDMC@home that enables personalized home monitoring and management for any condition

Project

Using an HL7® FHIR® interface to electronic health records (EHR), patients have real-time updated access to their medication list and care plan. When the care plan specifies remote monitoring, the app serves as a hub for connected health sensors such as those for blood pressure, heart rate, weight, oxygen saturation, or temperature.



CASE STUDY



By using this technology, we can gather data almost continuously to fill in the gaps between medical visits, which has lead to better outcomes for patients and fewer hospital readmissions.

— Seth Berkowitz, MD, staff radiologist and developer of BIDMC@home

The app gives patients a daily list of tasks to stay healthy, including medications to take, care plan activities to perform, subjective measurements, and subjective electronic Patient Reported Outcome (ePROs) questions to be answered.

Seamless for patients, these data points are sent back to the EHR as FHIR resources and incorporated into the longitudinal patient record for the care team to view and interpret in the context of patient notes and test results.

The data can be used to drive real-time patient decision support and inform changes to the care plan between clinical visits.

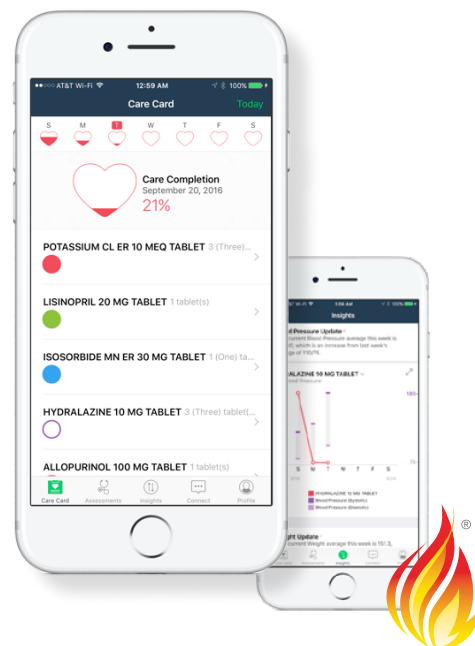
The initial use case was for monitoring congestive heart failure (CHF) patients. Planned uses include:

- Monitoring hypertension
- Titrating medications more rapidly
- Replacing routine prenatal visits
- Monitoring opioid use in post-surgical patients
- Assessing patients in outpatient chemotherapy for side effects
- Simplifying post-operative instructions after orthopedic surgery
- Monitoring patients for dehydration after major bowel surgery

Progress

Using an HL7® FHIR® interface, Beth Israel Deaconess Medical Center has created a platform for patients to maintain a relationship with their care team while self-managing their health at home. The care team is able to see all the relevant data within the EHR and respond accordingly.

While still in the early stages of piloting, initial feedback has been overwhelmingly positive. The long-term vision of the BIDMC@home app is to move the center of patient care from the clinic to the home, recognize subclinical deterioration earlier, and prevent patient decompensation to achieve better outcomes and reduce unnecessary hospital readmissions.



— BIDMC@home app —



Every patient has a customized care plan that is seamlessly synced from the EMR via FHIR interfaces, creating a secure, patient-controlled, shareable database of medical records.

— John Halamka, MD, MS, CIO BIDMC



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