# HealthAction Patient Toolkit

The HealthAction Patient Toolkit is a simple, interactive, and interoperable open-source tool that addresses the financial and personal burden of chronic illness by increasing a patient's awareness of his or her health status, enabling the patient to participate more fully with the care team, and improving the patient's treatment compliance.

What is the problem?

Roughly four out of five health care dollars are spent on behalf of people with chronic conditions. In addition to managing their day-to-day illnesses, chronically ill patients and their caregivers struggle to coordinate among multiple specialists, prepare for appointments, research information, comply with treatments, and communicate effectively with their providers. Providers must make critical decisions based on limited, incomplete, patient-provided data, resulting in duplication of tests, uncoordinated treatment plans, extended illness, and higher costs.

How will the HealthAction Patient Toolkit help?

This easy-to-use toolkit will demonstrate how mobile information technology (IT) can be leveraged to empower patients (or their caregivers) to more effectively manage their illnesses and to engage in successful partnerships with their care teams, particularly for chronic conditions. The outcome of this research is to evaluate how mobile IT can be leveraged to collect longitudinal, patient-generated data, present health information to improve patients' situational awareness, enable patients to communicate effectively with their providers, and increase treatment compliance rates.

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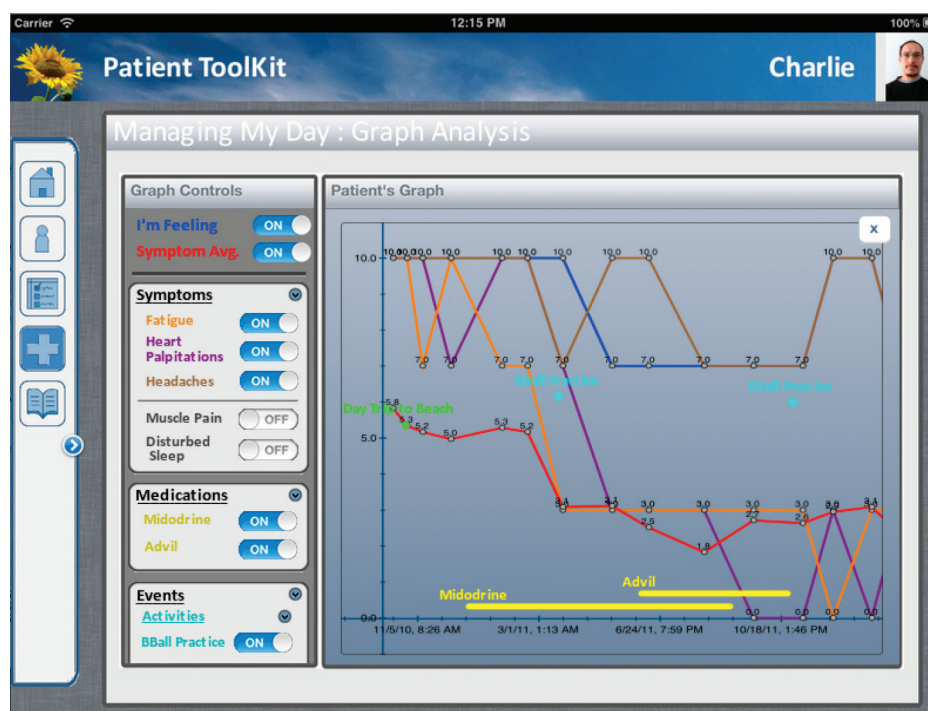
The toolkit includes simple, easy-to-use interfaces built upon patient-centered, daily workflows to maximize patients' engagement and help them develop habits that improve their health outcomes.

Specifically, the toolkit will empower patients to:

- Manage their days more effectively by providing a planner that integrates their health activities with their daily calendars

- Longitudinally track the severity of their symptoms, view the data to improve their situational awareness, and provide a complete set of information to their providers

- Increase their treatment compliance rates by providing tunable reminders that reduce errors by incorporating photos and relevant instructions

- Research their illness and stay current with latest reports

- Journal life events that may impact their health

- View longitudinal data as usable information in an easy-to-understand format that can be leveraged by both patients and providers, including the ability to identify cause-and-effect relationships among symptoms, treatment changes, compliance rates, life events, and data imported from external systems, such as laboratories

- Optimize the time spent with their providers and capture the results and actions from doctors' visits

- Accurately respond to questions from providers in real-time during office visits

Design Approach

The HealthAction Patient Toolkit is an open-source iPad application developed in modules to maximize the reuse of code. The toolkit's relational database is HL7-compliant to ensure future interoperability with other electronic health care systems. Requirements that overlap with existing iPad features, such as contact information, have been integrated with the existing iPad code to ensure ease of use.

Collaboration

A core assumption behind the HealthAction Patient Toolkit is that patient-reported symptom data is valuable to the patient and provider. To validate that assumption, MITRE is collaborating with the University of Virginia's engineering and medical centers on a clinical trial to assess the reliability of patient/caregiver-reported data, and to evaluate the impact of this data on the outcomes of chronic conditions.

The HealthAction Patient Toolkit is also leveraging the security and data sharing framework from the MITRE research project, hReader.

Summary

Research generated by the HealthAction Patient Toolkit will provide data to demonstrate the benefits of specific methods, best practices, and tools that can be leveraged to empower patients and their caregivers to successfully engage with their care teams. Because patients with chronic illnesses require the majority of health care dollars, identifying ways to improve care for this population introduces the potential for substantial savings in health care costs. This paradigm-changing tool has the potential to fundamentally change the patient-doctor engagement model for the benefit of both patients and providers, and to reduce the financial and personal burdens of chronic illnesses.

MITRE Research

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