

Novel app uses AI to guide, support cancer patients

February 15 2019



MyPath app adapts to each stage in a patient's cancer journey. Credit: Christopher Moore, Georgia Tech

Artificial Intelligence is helping to guide and support some 50 breast cancer patients in rural Georgia through a novel mobile application that

gives them personalized recommendations on everything from side effects to insurance.

The app, called MyPath, adapts to each stage in a patient's cancer journey. So the information available on the app—which runs on a tablet computer—regularly changes based on each patient's progress. Are you scheduled for surgery? MyPath will tell you what you need to know the day before.

"Patients have told us, 'It just seemed to magically know what I needed,'" said Elizabeth Mynatt, principal investigator for the work and Distinguished Professor in the School of Interactive Computing at Georgia Tech.

Mynatt, who is also Executive Director of the Institute for People and Technology, believes that MyPath is the first healthcare app capable of personalization (through its application of AI) for holistic cancer care. In addition to incorporating a patient's medical data, the app also addresses a variety of other relevant issues such as social and emotional needs.

She will present the work February 15 at the 2019 annual meeting of the American Association for the Advancement of Science.

National Recognition

In January MyPath was recognized by iSchools, a consortium of some 100 institutions worldwide (including Georgia Tech) dedicated to advancing the information field. Maia Jacobs, who recently received her Ph.D. from Georgia Tech for her work on MyPath, was named winner of the 2019 iSchools Doctoral Dissertation Award.

According to iSchools, "the Award Committee felt [that Jacobs' work] was timely and important, and lauded its impact in how patients manage

their health." Jacobs, now a postdoctoral fellow at Harvard, is currently exploring how to expand MyPath to other diseases.

The work was also honored in 2016 when it was featured in a report to President Barack Obama by the President's Cancer Panel. The report, *Improving Cancer-Related Outcomes with Connected Health*, aimed to "help patients manage their health information and participate in their own care," according to a Georgia Tech story at the time.

The Beginning

Six years ago Mynatt's team began working with the Harbin Clinic in Rome, Georgia. "They have a tremendous program in holistic cancer care where they recognize that their patients, who are from a large rural area, face a variety of challenges to be able to successfully navigate the cancer journey," Mynatt said.

But the Harbin doctors and cancer navigators—people who help patients through the cancer journey—wanted a better way to stay connected to patients on a regular basis. The navigators, in particular, found that they tended to interact with patients a great deal at diagnosis, but less frequently over time. And that meant that although there are many recommendations for, say, lowering anxiety, they weren't necessarily being communicated.

Said Mynatt, "We wondered how technology could amplify what these great people are doing."

How it Works

MyPath begins with a mobile library of resources compiled from the American Cancer Society and other reputable organizations. Then, it is

personalized with each patient's diagnosis and treatment plan, including the dates for specific procedures. Patients also complete regular surveys that help inform the system—and caregivers—of their changing needs and symptoms.

The result is a system that provides each patient with resources and suggestions specific to their personal situation. Because MyPath knows, for example, that you have stage 2 breast cancer and will be undergoing a lumpectomy on a specific date, when you click on the category "Preparing for Surgery" it will suggest relevant articles to prepare you for what's ahead. Have you reported nausea in the system's survey? MyPath will bring your attention to resources that can help combat the side effect. The system also provides quick access to contact information for specific caregivers.

Other apps—and the Internet—aren't personalized. That means slogging through a great deal of often technical information that's not relevant to your situation. In contrast, "Every day MyPath puts the right resources at your fingertips to help you through your cancer journey," Mynatt said.

More than Medical

Some of MyPath's most popular features have nothing to do directly with cancer. Buttons for "Emotional Support" and "Day to Day Matters" are regularly consulted by patients. "When we asked them about how they used the tablet for healthcare, many patients would talk to us about playing Angry Birds, which they would download to distract them during chemo sessions," Mynatt said.

MyPath is the second generation of the app. Patient feedback from its predecessor, My Journey Compass, led to changes including the personalization. Development continues. For example, Mynatt's team is hoping to expand the app for use by [cancer](#) survivors, who often face

additional challenges like hormone replacement therapy. The team is also working on a version that individual patients could download, which would make the app available to many more users.

Provided by Georgia Institute of Technology

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