

March 18, 2010

2010-03-18: Virtual nurse technology on path to commercial use

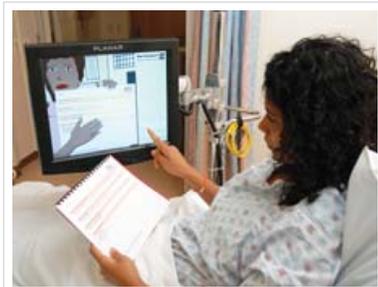
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Recommended Citation

University Communications and Public Relations, "2010-03-18: Virtual nurse technology on path to commercial use" (2010). *News@Northeastern*. Paper 538. <http://hdl.handle.net/2047/d20001781>

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Virtual nurse technology on path to commercial use



Patient interacts with virtual nurse. Photo by Glenn Kulbako.

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Northeastern University, the Boston Medical Center and Massachusetts Institute of Technology have entered into a licensing agreement with Engineered Care, a San Francisco-area healthcare software company, to pursue commercialization of virtual nursing software developed by **Northeastern computer science** professor Timothy Bickmore.

The software features a computer-animated nurse, "Louise," who talks patients through the hospital discharge process and assesses their understanding of medical instructions.

"Post-discharge self-care regimens are typically complex, with the average patient going away with 10 medications and multiple follow-up appointments," said Bickmore. "The discharge is even more hazardous for patients who have difficulty reading and following basic written medical instructions." Despite this level of complexity, he said, the average pre-discharge conversation outlining care instructions lasts fewer than eight minutes.

According to Dr. Brian Jack, a physician at the Boston Medical Center, nearly 20 percent of discharged patients are eventually readmitted to the hospital within a month due to low health literacy and insufficient knowledge of self-care medical instructions. Nearly 30 percent of these readmissions are preventable with a more complete reinforcement of discharge directions, said Jack. Reducing these preventable readmissions not only means healthier patients, but also lower health-care costs.

Louise is Bickmore's solution to the discharge issues that contribute to the hospital readmission rate. Using a touch screen, a patient interacts with Louise through an 11-step discharge process that takes an average of 52 minutes, a pace that can be controlled by the patient. Louise asks about medication regimens and follow-up visits. She also tailors her facial expressions and responses to the patient based upon the input patients provide on their comprehension of the discharge material. Louise will also quiz the patient to assess their understanding of medical instructions during the session.

In a pilot program at Boston Medical Center, nearly 450 patients used Louise, and the results were encouraging, said Bickmore. "Patients in the trial group weren't afraid to repeatedly ask Louise for instructions and didn't feel rushed to move through the discharge process," he said.

This technology is one of many research projects at Northeastern moving towards commercialization, said Jeffrey Kosiba, intellectual property manager in Northeastern's Office of Technology Innovation and Commercialization.

Engineered Care has been granted exclusive rights to implement the technology for patient discharge. The firm's goal is to market the product both domestically and globally within the next three years.

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