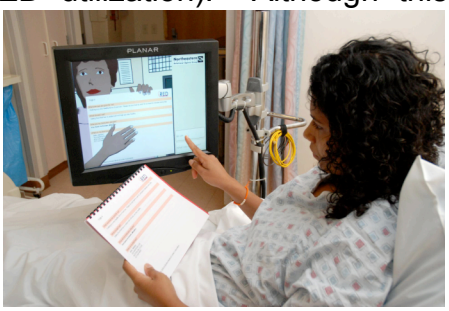
LOUISE: SAVING LIVES, CUTTING COSTS IN HEALTHCARE

In 2007, a protocol for discharge from the hospital was approved as a National Quality Forum *Safe Practice,* as a way to reduce the number of adverse events patients may encounter after leaving the hospital. This protocol has informed the creation of the "virtual discharge advocate," a hospital bedside patient education system that engages with patients about their post-discharge self-care plans; this includes:

- diagnoses
- medications
- follow-up appointments
- special diet
- exercise regimen

When the discharge protocol is carried out solely by human nurses and not the virtual discharge nurse it cuts costs by about $123 per patient (based on a 30% decrease in hospital and ED utilization). Although this process saves money, it costs nurses about 81 minutes of their time. With the new virtual discharge system, 30 minutes is now automated—a total savings of $145 per patient. There were over 38 million hospital discharges in the U.S. in 2003 alone—the virtual discharge system could save our healthcare system over $5B per year. The possible reach of the virtual discharge system's power is evident in the inquiries from hospitals in 49 states wanting to implement some part of the discharge protocol. There are currently no other national standards that address hospital discharge, nor any other automated systems available that assist with this process.



The system works either in a completely stand-alone fashion, in which all patient data is entered via the workstation, or with any portion of the data populated from the hospital Electronic Health Records.

Louise, one of the virtual discharge systems is an animated conversational character that simulates face-to-face interaction between a patient and a nurse. She was designed based on a detailed analysis of how human nurses explain written medical instructions to patients. Patients interact with Louise by using a touch screen display that is mounted on an articulated arm so that patients can interact with the discharge system from a variety of positions in their hospital bed. Louise can talk because she uses synthetic speech and synchronized animation, and patients can respond to her by touching what they want to say on the touch screen. The language used by Louise is dynamically composed based on each patient's medical data and questions asked.

Louise and the patient review the After Hospital Care Packet together: Louise has a copy that is displayed on-screen while the patient holds their own paper-based copy. Both the AHCP booklet and Louise are specifically designed for patients with low health literacy. Ninety million Americans (36% of adults) have inadequate health literacy, resulting in a reduced ability to read and follow directions in the healthcare environment; they have lower health literacy, higher healthcare costs and, higher rates of hospitalization and re-hospitalization.

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