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## Robots and other tech on display at new UCSF hospital

By Stephanie Lee

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At the new UCSF Medical Center at Mission Bay, patients will chat with physicians through tablets and get their medications delivered by robots.

From interactive wall installations to wireless communication devices for the staff, cutting-edge technology is front and center at the \$1.5 billion medical facility that, after more than a decade of planning and construction, will open Sunday.

Technology may seem like a given at a medical facility in the region that gave birth to computing. But it was installed thoughtfully, said Dr. Seth Bokser, the center's associate chief medical officer.

"We want to use technology in a way that frees up our human providers to do what they're good at, which is to focus on our patients," he said on a recent afternoon, strolling through the orange, green and white corridors of the six-story, 878,000-square-foot hospital complex. "Patient-centered care is not just about putting technology into a hospital."

Starting Sunday, 289 beds will become available at the three new hospitals: UCSF Benioff Children's Hospital San Francisco, UCSF Betty Irene Moore Women's Hospital and UCSF Bakar Cancer Hospital. Outpatient services have already started at the UCSF Ron Conway Family Gateway Medical Building, which was funded in part by \$40 million from angel investor Ron Conway and his family.

The facilities' \$50 million budget for information technology went to workstations, network infrastructure, voice communications, patient engagement technology and other expenses, administrators said.

In their rooms, acute-care patients will have a tablet they can use either independently or to control a 65-inch TV on the wall. They can video-chat with their doctors, order custom meals to be delivered, exchange messages with care providers and see their lab results when they become available. And to pass time, they can stream movies and music. The technology was designed by the Irish software company OneView Healthcare.

The technology isn't restricted to patients. Staff members communicate through a text, voice and mobile alarm system designed by Voalte.

Then there's the fleet of more than two dozen self-directed robots — the largest number at any hospital, according to their makers, Aethon.

The tall, boxy computers on wheels can navigate the hospital on their own because they receive signals through Wi-Fi, and elevators and doors are designed to open for them. In the course of a day, they carry meals, linens, medical instruments, medications and lab samples more than a dozen miles.

Programmed to know exactly who their targets are, the robots can be opened only by PIN codes and biometrics, such as fingerprints. If they get blocked en route, an engineer can redirect them. The robots aren't intended to replace doctors, Bokser said, but instead handle mundane, tiring tasks.

"This, for example, will free up our nursing staff from having to bring things back and forth from the lab," he said, "from taking sample cups from the lab up to the floor and sending samples back to the lab."

It's futuristic, but not completely so. Aethon's robots are already used in more than 110 hospitals worldwide.

"Web 2.0 is a very engaged, social, participatory place," Bokser said. "We're building 'health 2.0' here at UCSF Mission Bay."