

# Full Nelson: Healthcare Innovation: Kaiser's Garfield Center

Provider's lab offers an exciting peek into the technological future of patient care.

By Fritz Nelson, [InformationWeek](#), Feb. 23, 2010

The O-gap, as in the operational gap, is that mysterious abyss between an idea and its fruition. It's that thing so many creative geniuses run from like a child from spinach. The O-gap happens to be the sweet spot of Kaiser Permanente's Garfield Center, an elaborate warehouse wedged in an office park in San Leandro, Calif. What's inside is a provocative set of healthcare technology innovations that might actually make you want to check in, even if you're not sick.

Garfield Center is a place for testing new technology, not just to see if it works, but to see HOW it works as part of the daily hospital workflow, with teams of doctors and the entire hospital staff. Some of the technology is years away, but much of it gets deployed at Kaiser facilities and university hospitals. Come join us for a ride you won't believe.

Inside the digital operating room, a 600-square-foot, state-of-the-art facility with more gadgets than a Brookstone, is what seems to be fairly mundane medical image routing and archiving technology. Doctors have been sending graphically intense images across networks for years, but this room includes a simple console from which physicians can control what images get transferred to various screens (and locations) easily and swiftly.

Faster, better imaging facilitates more accurate patient information, which not only helps hospitals meet exigent regulatory burdens (the consumption of medical images has exceeded the volume of data kept at the Library of Congress, Kaiser officials told me), but also extends the operating room to specialists in nearby partner hospitals, or nearly anywhere in the world.

There are toys, none better than the visible light device, a wand only slightly bigger than a thermometer but with a tiny camera on its tip. It can be used in minimally invasive procedures, projecting something inside the body in high definition onto a screen. Sean Chai, Kaiser's senior IT manager, tricked me with a life-like image of some internal organ I couldn't guess -- I was thinking intestinal; it turned out to be a melting red candy inside an orange.

As long as we're playing around, why not gesture-based computing ... in the air. Imagine a doctor up to his scrubbed elbows in blood (not yours, let's hope) during surgery and needing a piece of information stored on a nearby computer. With gestures, he could pull up an image and project it in front of him and start interacting with it. This capability is still five to 10 years away, according to Chai.

Kaiser is also trying to redefine patient rooms. We lounged in one with entrances wide enough for entire staff to walk through and a large family area that includes a sofa bed. The bathroom has

been made safer, and the entire hospital uses ecofriendly materials, like rubber floors which are less stressful on staff bodies and chemically less harmful.

Rooms at the Garfield Center are equipped with videoconferencing. The aim is to make a TV equipped with a camera an interactive patient care device and patient kiosk. Empower the patient, if you will. Naturally, it accelerates the introduction of telemedicine, and the ability for doctors to make virtual rounds. Home-based versions of this system could provide for tele-dermatology through the use of HD cameras and displays. Kaiser representatives say this capability is starting to take off.

I saw both Cisco and Tandberg equipment in the Garfield Center, as well as Polycom systems on carts (for hospitals that don't want to retrofit rooms). Chai says that they've even used Skype as a low-cost option.

Physicians in Hawaii are already using the Tandberg high-end videoconference system, allowing physicians to consult one another, offering translation or interpretation of chart results, for example. In real time.

Another nifty convenience is the Garfield Center's Robot. Don't worry, he won't be operating. Mostly, this programmable device, about the size of a dorm-room refrigerator, brings equipment (food, linen carts, lunch tray carts -- up to 500 pounds) into rooms or to nurses. The one we saw had programmed destinations and methodologically went about its tasks, careful not to bump into people or other objects (no matter how hard we tried to get in its way). There are 17 robots being piloted in Southern California, Kaiser told us.

Garfield also makes use of mobile technology (or, as Kaiser calls it: "mobile point of care"). Mobile care happens through smartphones or tablets, each with a camera so a care professional can take a picture of a wound or rash (yeah, don't go there). Devices also come with barcode scanners for tracking the dispensing of medication. The tablets are Panasonic ToughBooks, ruggedized devices originally intended for military use, among other applications.

Chai says the center is always on the lookout for new mobile apps, like the iPhone AirStrip, which lets doctors get real-time vital signs on the run.

The future for these mobile devices looks bright, especially since doctors and nurses would prefer to carry or cart less equipment around the hospital. In other words, devices like iPhones can be a point of technology convergence.

Much of this technology can also let patients get treatment and advice from the comfort of home. Indeed, the folks at the Garfield Center think that by 2015, the home will become the hub of care. After that comes "health unbound" (on the go, hiking, etc), using phones and wrist watch technology (for example, using the video camera you could have a live videoconference with a physician about a poisonous rash or a snake bite, its danger, and its treatment).

The Garfield Center sometimes experiments with far-out concepts. One of those is the iRobot, which is one of those automatic, self-driven vacuums (you know it as the Roomba). This particular version comes with a camera on top and remote control. Officials say they aren't quite sure what to do with it yet.

Kaiser is also pushing self care and education. The Intel Health Guide looks a little like game console, collects personal health information in the home. Patients interact with this multi-lingual, multimedia device, answering questions. The Health Guide aggregates all types of information -- what a patient answers, external temperature, food consumption, blood pressure, and so on. The output is displayed on a dashboard that can tell professional care givers whether a patient is at short- or long-term medical risk.

The Garfield Center works with its partners, employees, and customers to build the experience. On the technology side, it talks to R&D groups and labs, with a mission of looking out 10 to 15 years. It doesn't put out RFPs, but RFIs (requests for innovation!). It brings in physicians and nurses to use the facility and provide feedback, not just on the usefulness of the technology but on how it works into a hospital workflow. It also brings in focus groups to look at the center (and its technology) from a patient point of view.

### **An Innovation Mission**

While all of this, from the digital operating room to the life-like, simulated patient dummies, is exciting, it sure looks costly. I couldn't get any dollar figures from Kaiser's innovation chief, Heather Wilson (actual title: VP, Innovation & Advanced Technology), but we did discuss the Garfield Center's funding. It's supported from the top levels at Kaiser, Wilson says, and it isn't necessarily measured in terms of ROI. "It's difficult to measure innovation," she says. "It could be years before you know what makes a difference. It's more about showing members we listen and are trying to advance care delivery. It's part of our brand and marketing, our strategic future."

Kaiser wants to be known as an innovator, and the Garfield Center sits at the center of that reputation. More important, it serves as place where chances can be taken, and people can fail safely.

Wilson is measured on how many innovations Kaiser gets across the O-gap and into production, and she sees part of her job as infusing the innovation DNA throughout the company. She asks regional Kaiser employees to be "innovation hunters," always on the lookout for new ideas and new technology.

The center hosts technology demonstration days once a month. No PowerPoint allowed. Partners need to deploy the technology. Garfield also hosts innovation workshops, not just focusing on how to find ideas, but also on how to sell them internally and to operationalize them once they get buy-in.

Chronic disease prevention has become a major health care industry focus these days, given that the top five account for 75% of healthcare costs, according to Wilson. Kaiser built an algorithm that's part of its Carepoint program (focused on chronic conditions) that sits on top of a medical record, mining data and identifying patients at risk. Once identified, patients get contacted and become part of a care program where they're monitored by a physician.

Kaiser is working now on predictive analytics: combining genetic information with environmental factors and a patient's current physical state, and not just for predicting future health problems, but also to help determine an optimal physical health.

As part of the prevention focus, Kaiser runs a program where it turns teens into health advocates. As the epidemic of teen obesity and chronic diabetes grows, it affects other chronic conditions. Kaiser started a pilot program in Virginia to educate teens on things like their food choices, and how their environment can affect them physically. These teens, in turn, also help educate their parents. The younger generation can even help parents get over techno-gaps -- learn to receive information (like lab results) electronically, for instance, or make appointments online.

Kaiser's health plans and healthcare services regularly rank highly (for example, in [US News and World Report's health plan rankings](#) and [California's Office of the Patient Advocate Report Card](#)).

### **Stitching It All Up**

Some of the technology (gesture-based computing, for example) is still at least five years away, but without places like the Garfield Center, Wilson says, these technologies would be even further away. There is a balance, she says, between simply having the technology and knowing people are ready for it and whether it fits into a hospital's workflow.

These programs, this center, this level of innovation are enough to get anyone's heart rate up, not just because of the fancy toys and technology, but because Kaiser is investing in innovation, not for the sake of ROI, but for the company's future, and because it has faith that its investments will make a difference.

*Fritz Nelson is the editorial director for InformationWeek and the Executive Producer of TechWebTV. Fritz writes about startups and established companies alike, but likes to exploit multiple forms of media into his writing.*