



# IT to the Rescue: IMPROVING COMMUNITY HEALTH VIA THE WEB

By Linda Anderberg

If there's one thing public health professionals have in common, it's that they are driven to approach problems "upstream." Improving the treatment options for people who have chronic diseases is great; preventing people from getting chronic diseases is even better.

In addition to teaching part-time at the School as a clinical professor for more than a decade, health and tech expert **Deryk Van Brunt, Dr.P.H. '97**, has worked with nonprofit and private companies to provide online access to medical information for patients and physicians.

His résumé includes some virtual heavy hitters: HealthCentral.com, eMedicine, and iMetrikus. Van Brunt has had great success helping to create these online medical resources, but eventually he wanted to take things a step further.

"There's been a huge consumption of online personal medical information," says Van Brunt. "However, by definition, this type of information has a limited impact on health outcomes. We need to move upstream to disease prevention. The question becomes, how do we use information technology to improve the social and physical environment in which we live, and positively affect lifestyle?"

This is a good question, because up to 70 percent of the determinants of health across a population stem from lifestyle and the environment. In contrast, quality of

and access to medical care determine only 10 to 15 percent of our health status.

“Not to take anything away from how important medical care and genomics are—especially when we get sick—but across a population a bigger part of the equation that we need to crack is getting at lifestyle and environmental issues,” says Van Brunt. “That said, with few exceptions, we’ve not done a good job at that. We spend roughly 99 percent of our money over on the medical side and only one percent on prevention and community health.”

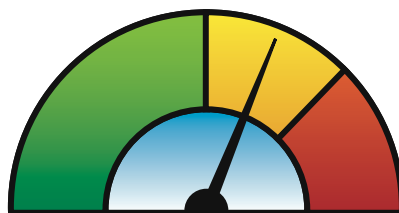
### CHANGE ON A COMMUNITY LEVEL

With help from a 2002 grant from Jennifer Maxwell, who cofounded PowerBar with her late husband Brian Maxwell, Van Brunt and colleagues at UC Berkeley and Harvard set out to learn how IT could be used to better understand health measures and manage the health of people in their communities. They formed the Healthy Communities Institute, of which Van Brunt is the chairman. The organization’s mission is to help counties and regions improve the health and environmental sustainability of their communities, in the United States and internationally.

One of the first challenges Van Brunt and his team came across was very fundamental—how do communities change? While various agencies and organizations collect a wide range of data—health, environmental, economic, and so on—it remains difficult for stakeholders in communities to find this data, understand it, and take concrete action to improve their areas of interest.

“If what you want to do is empower a community to build a healthier environment, you need to understand how change occurs. You can’t just put up information and expect great changes to occur,” says Van Brunt.

So in addition to drawing on literature and conducting interviews of health experts and information technology experts, Van Brunt’s team also became well versed in change theory. They learned that, for most changes to occur, community stakeholders need to be aware of an issue, understand its severity to the community and themselves, be able to



The dashboard can give instant feedback on how a community is performing in a particular area.



communicate with others locally and have support in making decisions, know how to operationalize their decisions, and be able to track or record their results.

“We thought, if we’re going to build something, it should help communities do all these things,” says Van Brunt. “So we said, what could we build that would support these factors, and we came up with all kinds of ideas.”

They honed the ideas and eventually created a web-based information system, the Healthy Communities Network (HCN), which provides an easy to understand presentation layer of health, environmental, and other quality of life indicators for community stakeholders such as boards of supervisors, mayors, health departments, hospital councils, and others. It also links people in the community to promising practices and many other resources to help them move from a community report card to informed action.

### A DASHBOARD FOR COMMUNITY HEALTH

HCN contains roughly 20 capabilities or applications, but two of them are the anchors. The first is a color-coded dashboard that has more than 100 health, environmental, and quality of life indicators that provide a visual representation of what’s working and not working in any given community.

“I call it the 747 panel phenomenon,” says Van Brunt. “You can see everything that’s going on in a snapshot.”

The dashboard can give instant feedback on how a community is performing in a particular area. Scrolling down to Health: Communicable Diseases: Tuberculosis Incidence Rate, for example, will show you that San Francisco is “in the red” in this area. That means that San

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Francisco is in the worst quartile compared to other counties in California. Counties that are performing in the second worst quartile are yellow, and the better half are in the green.

"We can provide a breakout by race and neighborhood, if the data is dense enough," says Van Brunt. "So, in San Francisco, you can see immediately that the incidence rates of TB are particularly high with Asian/Pacific Islanders, and you can see by neighborhood that it's clustered in the Tenderloin, South of Market, and Chinatown."

He adds, "It's an information system that promotes transparency and accountability in the community."

### A GOOD "BEST PRACTICE" IS HARD TO FIND

One key for promoting change is for stakeholders to have easy access to information about promising practices already performed by other communities to address health problems. But in the course of his research, Van Brunt discovered that most of the information about communities and best practices tended to

be collected in organizational silos and was often only reported on paper or in static reports online.

"I've been working on this for eight years," says Van Brunt. "And the biggest surprise for me was that no comprehensive 'best practices' database existed. I didn't want to build one. I went to various government and nonprofit agencies, I went all over the place, and nobody had it."

So Van Brunt and his team compiled a best practices database themselves. The HCN

## Health Knowledge Travels with WiRED



On March 18, 2009, the UC Berkeley School of Public Health presented the Organizational Public Health Hero award to WiRED International for its achievements in using information technology to provide

up-to-date health education and medical information in developing, post-conflict, and isolated regions of the world.



Robert Corrigan (left), president of San Francisco State University, presents the 2009 UC Berkeley Public Health Hero Award to WiRED International, represented by executive director Gary Selnow.

WiRED International's mission is to ensure equal access to information that saves lives. Providing equipment, coordination, and contacts, it brings vital information to communities coping with the challenges of war, poverty, and dislocation. Within a single day, WiRED can convert an empty room into a technology hub with global reach.

Executive director **Gary Selnow** (a professor at San Francisco State University) began WiRED's work in 1997 while serving as a Fulbright Fellow at Croatia's University of Zagreb just following the Balkan War. Selnow was moved by the war's impact on the region's children, who were without adequate educational resources and had no access to basic computer technologies. With a small seed grant from USAID, he launched WiRED—inspired by the idea that access to the Internet could help end the children's isolation and enhance their education. That idea evolved into a larger effort to provide medical education and information resources for health care educators and practitioners in troubled regions.

WiRED's technology information centers have served some one million people annually at nearly 100 locations in 12 countries on four continents. WiRED's Medical Information Centers supply isolated doctors and other health care professionals with computers, Internet access, and other technology; medical curricula; and collaboration with well-trained doctors in developed countries. WiRED's Community Health Information Centers connect people at the grassroots level to interactive computer-based information—often the only source of health information available to them.

database now contains more than 1,000 promising practices, and “we just add to it every day,” says Van Brunt. Each best practice is ranked for methodological rigor and is succinctly summarized. The best practices are contextually linked throughout the information system. For instance, if you are looking at the high tuberculosis incidences rate in San Francisco, a single click will take you to a summary of a successful Suffolk County Department of Health Services program whose goal was to reduce rates of TB in foreign-born populations.

### A TEMPLATE FOR CHANGE

Healthy Communities Institute has launched HCNs in San Francisco and Marin Counties in California and Whatcom County in Washington state, which have served as test communities for the system. Today communities encompassing more than

3 million lives have signed up in the United States, and growth is accelerating.

“What we developed is an information system that’s a template,” Van Brunt says. “You can

launch it for any community that wants to use it. My vision is that communities can turn it on throughout the United States, and over time internationally.”



## The Wiki Way to Health

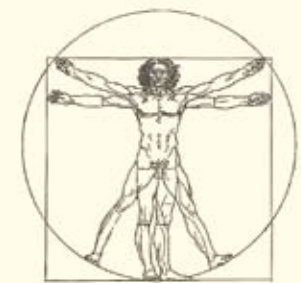
The UC Berkeley School of Public Health has teamed with Internet entrepreneurs, doctors, researchers, and other health professionals to create Medpedia ([www.medpedia.com](http://www.medpedia.com)), an online medical encyclopedia that will likely become the Web’s largest body of medicine and health information. Modeled after Wikipedia, the online resource is written and edited only by trained health professionals and organizations. The site was launched publicly on February 17, 2009.

The School signed on to help build Medpedia’s comprehensive medical clearinghouse, along with Harvard Medical School, Stanford University School of Medicine, and the University of Michigan Medical School. **John Swartzberg, M.D.**, professor and chair

of the editorial board of the *UC Berkeley Wellness Letter*, provided advice and guidance during the planning stages of the project.

School of Public Health **Dean Stephen Shortell** said, “Our work with Medpedia will expand our commitment to provide the most current evidence-based health information to the widest possible audiences.”

The site will eventually have web pages for more than 30,000 diseases and conditions, more than 10,000 prescription drugs, thousands of medical procedures, and millions of medical facilities. These pages will provide insight into the latest health and medical discoveries along with photographs, video, sound, and images.



**MEDPEDIA**  
[www.medpedia.com](http://www.medpedia.com)

“In recent years, we have witnessed the benefit that a web site like Wikipedia can have on all knowledge,” said James Currier, Medpedia founder and chairman. “With ongoing experimentation and guidance from the medical community, Medpedia could provide a similar benefit to the world in the specialized area of health and medicine.”