

A Futurist's View of Tomorrow's Healthcare Technologies:

An Interview with Vito Di Bari



Dubbed the “new European guru of innovation” by *The Financial Times*, Vito Di Bari is an acclaimed author, commentator, and expert on future technologies. From his home country of Italy, Di Bari serves as a columnist for *Panorama*, *Wired*, and *Harvard Business Review*; as a TV anchorman for Italia 1 and the Discovery Channel; and as a professor of Design and Management of Innovation at Bocconi University in Milan. He is the Scientific Director of LabNext, an international research laboratory named “Milan’s think tank” by *Wired*. Vito is also the Innovation Designer for the upcoming 2015 Universal EXPO, in which he will feature

his designs for a city of the near future in which digital and physical architecture are intertwined.

Vito spoke with *HIT Exchange* about emerging healthcare technologies that could greatly benefit both patients and caregivers in the not-too-distant future.

HIT Exchange: You’ve been a proponent of numerous healthcare technology innovations, including portable medical sensors that provide continual patient monitoring. How do you see these devices affecting care in the next five to 10 years?

Di Bari: These devices will allow caregivers to monitor their patients

with more efficiency and ease. People will become aware of their illnesses sooner, and those already diagnosed with illnesses will be able to monitor their conditions more effectively.

One promising device, called Sensix Allergy Alert System, monitors allergic reactions in children. When one occurs, the monitor alerts parents or caregivers, while simultaneously identifying the location of the child and the medicine.

Another project, a robot called Memo, is a “memory totem” that helps Alzheimer’s patients by correcting linguistic errors, distributing medicine, keeping patients connected to their families, and remembering vital information about the owners’ lives. It is equipped with ultrasonic sensors, a video camera, DVD player, LED display, wi-fi/bluetooth antenna, and a medicine dispenser.

HIT Exchange: Of all the devices you’ve seen, which is the most exciting or groundbreaking and why?

Di Bari: Sensor nodes have been used for some time in earthquake measurements, engineering, and even warfare. With the biomedical and healthcare industry one of the fastest-growing for wireless technologies, motes have the potential to transform this industry with a vast array of uses. For example, motes are now being tested for use in emergency triage, as well as patient profiling and monitoring.

HIT Exchange: What kinds of emerging sensor technologies do you anticipate in the next five to 10 years?

Di Bari: We will see more devices for monitoring and prevention, and then an influx of devices to aid with treatments.

Along the same lines, the medical home concept continues to evolve toward providing patients with a comfortable environment and their caregivers with the real-time data they need to treat their patients.

One of the more bizarre yet intriguing devices is an intelligent toilet with a built-in instant health check-up system that does everything from gathering all vitals to full urinalysis. It is possible that after a visit to the bathroom in your home, you could get a call from your doctor regarding a potential health concern.

HIT Exchange: What other out-of-the-box possibilities do you see coming?

Di Bari: I have designed a trendy site inspired by the general public's need to become more health conscious. Named "Check-Up Café," it is basically a virtual place where patrons can have their vitals measured and checked in non-invasive ways. For example, the straw used to stir your coffee will be collected by the waiter, and the saliva can be tested. Also, the seats will be able to measure your blood pressure and heart rate. The café will not replace hospitals, but indicate a more accurate check-up might be required, and it will direct people to the hospitals to get it done.

HIT Exchange: Another advancement you've been following is a cell phone-powered blood analyzer for use in locations

where such devices are not widely available today. What other innovative medical solutions powered by mobile devices do you believe will be possible in the future?

Di Bari: More and more devices are allowing us to stay "connected." Just about everything will be sent using phones and mobile technology. Caregivers will be able to test, monitor, and even treat patients, even in the most remote places, through mobile technology. In particular, I am speaking about applications for phones. Many are already available. For example, the app Allscripts Remote™ is an electronic health record and "e-prescribing" tool that will allow doctors to triage and treat patients from any location. If a specialist is needed, an app like ResolutionMD Mobile will allow physicians to contact one no matter where the physician and/or patients are located. Even in practices that normally require a doctor meet with a patient in person, apps can facilitate care. An example of this, ASCENT (Amputee Screening via CELLphone NeTworking), will allow amputees in rural areas to be evaluated by city-based doctors without having to travel far. Instead of a long trip to the city, patients can visit rural health workers, who will forward their data and prosthetic limb requests.

HIT Exchange: Are any other technological innovations on the horizon that will improve patient care?

Di Bari: As a matter of fact, some prototype devices are being improved for commercial use. At The University of



Utah, researchers have developed a device that could test for hundreds of diseases simultaneously. It acts much like a credit card-swipe machine to scan a card loaded with microscopic blood, saliva, or urine samples. Results could be available in minutes instead of hours or weeks. With a device like this, doctors will be able to give patients test results right away and put patients' nerves at ease. ●

**PEOPLE will become
AWARE of their
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