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The doctor in your pocket

Sep 15th 2005

From The Economist print edition



Medical technology: Nearly everyone in the developed world carries a mobile phone—so why not use it to deliver health care?

GARY KATZ is a repeat offender. A few years ago, a nutritionist helped him to reduce his blood-cholesterol level from a troubling 286 to a reasonable 177. But after his annual check-up in April, Mr Katz found that his cholesterol was once again too high. The businessman turned to the same nutritionist as before, but now he and his food adviser have a secret weapon: the mobile phone.

Through a new service called MyFoodPhone, Mr Katz uses the camera built into his phone to take a picture of every meal. This is far easier than writing everything down in a food log, which the 44-year-old New Yorker did the last time he was fighting high cholesterol. At the end of each week, his nutritionist e-mails him a dietary critique. "I was never one for the whole food-log thing," says Mr Katz, who owns a floor-covering business. "Now I'm doing better at keeping track of what I eat. I always have my phone with me—it's like having a conscience hanging on your waist."

The notion of procuring health care via phone is not new: when doctors routinely made house calls, medical help was just a phone call away. "Most

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health-care services today are delivered inside medical premises," says José Lacal of MotoHealth, the health-telemetry project run by Motorola, the world's second-biggest mobile-phone manufacturer. "But with the mobile phone, you can take the services with you." HBS Consulting, a consultancy based in London, estimates that the global "telehealth" market—the use of telecommunications and information technology to deliver health care and related services—will grow to \$7.7 billion in 2006, up from \$3.2 billion in 2003.

So far, most mobile telehealth services, such as MyFoodPhone, simply use ordinary mobile phones to collect and transmit data. The next stage is to add specific medical sensors, which can even be incorporated directly into the handset. For example, LG, a South Korean handset-maker, started selling a phone with a built-in blood-glucose meter, for use by diabetics, in its home market last year. It can transmit blood-glucose readings to a doctor, parent or desktop computer for further analysis. Healthpia America, based in Newark, New Jersey, plans to launch the phone in America in January.

Motorola and Partners Telemedicine (a division of Partners HealthCare, a group of hospitals and health-care providers in Boston) have been testing devices that can transmit a patient's weight, blood pressure and other data. Weighing scales and blood-pressure monitors communicate via Bluetooth (a short-range radio technology) with the mobile phone, which then sends the data to the doctor. Clinical trials are under way in Barcelona and Boston, says Mr Lacal, with potential commercialisation as early as next year.

In Britain, a joint-venture between the Institute of Biomedical Engineering at Imperial College London, Toumaz Technology and Oracle, the world's second-largest software firm, has devised a "pervasive monitoring system" that will enter trials in 2006. A small sensor, attached using a sticking plaster, monitors the patient's heartbeat and detects irregularities. The resulting electrocardiogram data is

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MyFoodPhone is a mobile telehealth service. Motorola has a [press release](#) on its alliance with [Partners Telemedicine](#). HBS Consulting posts a [strategy review](#) of the telehealth market. Toumaz Technology offers a [summary](#) of its joint-venture with [Oracle](#) and the [Institute of Biomedical Engineering](#). Mr Green of SIMpill [explains](#) the problem of non-compliance. The Centres for Disease Control and Prevention [outlines](#) the costs of chronic illness. See also [Healthpia America](#), [Bluetooth](#) and [Qualcomm](#).

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sent wirelessly to a nearby mobile phone, which then transmits it to a monitoring centre, or directly to a doctor.

Mobile telehealth need not be so elaborate, however. SIMpill, a South African firm, makes a small device that clips on to a medication bottle and sends a text message to a central computer whenever the cap is removed. If no message arrives, the central computer sends a text-message reminder to the patient, or to a family member or carer. The system is now used by more than 2,000 people and can dramatically improve compliance, says SIMpill's founder, David Green. It has just been launched in America.

Many observers expect mobile telehealth to take off in mobile-loving South Korea and Japan, but to lag behind in America, where consumers are more likely to raise privacy concerns. But Donald Jones, head of mobile health care at Qualcomm, a wireless-technology firm based in San Diego, notes that phones' built-in security features make them far more secure than PCs.

Besides, the need for tools to improve the management of chronic health conditions cannot be overstated. According to America's Centres for Disease Control and Prevention, more than 90m Americans have a chronic illness, and they account for over 75% of the nation's \$1.4 trillion annual spending on health care. So the mobile phone could be a useful tool to combat both chronic disease and runaway medical costs. Joseph Kvedar of Partners Telemedicine, who is also a professor at the Harvard Medical School, suggests that insurance companies might, for example, offer free phone minutes to customers who go for a walk every day. Their compliance would be monitored by a pedometer built into the handset.

Mobile phones' impact on health care could be even greater in the developing world, where mobiles far outnumber PCs. "For most of the world", says Mr Jones, "this is the only computer they are ever going to own. It's on the internet. And they carry it everywhere." Get ready for the doctor in your pocket.



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