



"Living Tower" is one of several vertical farm proposals, but critics say futuristic schemes and rigid insistence on organic methods undermine farmers' efforts to gradually improve agriculture.

large part of tropical and subtropical grasslands to cropland, and the return of a substantial share of the labor force to field farming."

Another greatest hit on the sustainable farming activist checklist is the concept of local food. But most eaters now live in cities, far from the producers. Close-in farmland either is economically prohibitive or requires farmers to concentrate on high-margin products—heirloom tomatoes and mache spring to mind—to survive. Moreover, rural communities can't sustain themselves economically by selling locally. One farmer in Oregon can grow more pears on a few hundred acres than the entire state can eat in a season, according to Roberts.

Dickson Despommier, a Columbia University professor and visionary champion of vertical farming, claims that a 30-story glass skyscraper using nonsoil farming could produce enough food on a single city block to feed 50,000 people. But his farm would cost \$200 mil-

lion to build. Other seers are promoting more modest vertical schemes, such as Sky Vegetables, which would use grocery store rooftops—for example, the four acres atop a typical Wal-Mart superstore.

But if sustainable food is to mean anything for more than the affluent few, long-distance transportation cannot be eliminated, Roberts argues. Parts of Asia and Africa are rapidly running out of water and arable land. And some things simply grow better in certain places.

The quest for the perfect sustainable system cannot be allowed to block the many pathways toward better food practice, Roberts says. Farmers who vastly reduce their use of synthetic fertilizer should not be treated as pariahs because they still use herbicides. The principle of reducing "food miles" might be advanced by curtailing fresh-raspberry airlifts from Mexico, but it shouldn't be used to undermine the efficient bulk-delivery systems supermarkets already have in place.

SCIENCE & TECHNOLOGY

Medicine Meets the Computer

THE SOURCE: "Use of Electronic Health Records in U.S. Hospitals" by Ashish K. Jha et al., "No Small Change for the Health Information Economy" by Kenneth D. Mandl and Isaac S. Kohane, and "Stimulating the Adoption of Health Information Technology" by David Blumenthal, in *The New England Journal of Medicine*, April 16, March 26, and April 9, 2009.

THE ENDLESS MANILA FOLDERS that hold the medical history of most Americans seem curiously antiquated in a world of routine in vitro fertilization. So the Obama administration's \$19 billion effort to goad the medical establishment into computerizing medical records sounds like an easy part of the huge economic stimulus package. But there are monumental challenges in installing adaptable systems that will truly improve patient care and cut costs.

Only 1.5 percent of U.S. hospitals have electronic records systems covering all their clinical units; an additional 7.6 percent have systems in at least one such hospital division, writes Ashish K. Jha, M.D., who collaborated with seven colleagues at Harvard and one at George Washington University on a survey of 3,000 hospitals. Fewer than one in five doctors uses any kind of electronic records system.

Hospital officials attribute the delay to a lack of capital for the initial purchase and subsequent costs, as well as physician resistance and concerns over whether computerization would cost more than it would save. Privacy concerns, which loom large in the public discussion, were not among the most commonly cited barriers to implementation.

The Obama administration has offered extra Medicare payments of up to \$44,000 per doctor for “meaningful use” of a “certified” electronic health-record system and \$2 million bonuses to hospitals.

But in a world where technology changes at warp speed, will the newly named coordinator of the program, David Blumenthal, M.D., certify technology that is flexible and innovative enough to keep up with fast-changing medical and information systems?

Current technologies, write Kenneth D. Mandl, M.D., of Children’s Hospital in Boston and Isaac S. Kohane, M.D., of Harvard Medical School, can be expensive and rigid. Big decisions need to be made up front to prevent hospitals and doctors’ offices from buying the medical equivalent of VHS video-tape technology in a world that eventually might go Blu-ray.

“Ideally, system components should be not only interoperable but also substitutable,” Mandl and Kohane say. They cite as a model the

Computerized health care records may seem like a worthy goal, but will technology be flexible and innovative enough to keep up with quickly evolving medical and information systems?

Apple iPhone, which has a software platform that allows users to download new applications and toss out old ones. And information should have “liquidity” and “substitutability”—at least at the level of an ATM—so that a doctor could use billing software from one vendor, a prescription-writing program from another, and a laboratory information system from a third. Competition and innovation might flourish if vendors could specialize.

To prevent physicians from becoming “scribes,” regulations must ensure that new electronic systems exhibit a “realistic respect” for physi-

cians’ time, Mandl and Kohane write. A RAND Corporation study in 2005 estimated that electronic health records could save up to \$77 billion annually through reduced hospital stays, avoidance of duplicate or useless tests, better drug utilization, and other efficiencies. But physicians also must see a direct benefit from mastering the new technology if they are to be motivated to use it to the fullest.

Blumenthal outlines “huge challenges,” in an article that appeared only five days after he was named to the program coordinator position. He says that many of the electronic records systems that have already been certified are neither user friendly nor likely to improve quality and efficiency in the health care system. Tightening the certification process is a “critical early challenge,” he says, but if the requirements are set too high, doctors will lobby to change the law or just forgo the bonus and hunker down to accept the penalties.

ARTS & LETTERS

Gilded Vestibules

THE SOURCE: “Rolling Out the Unwelcome Mat for Visitor Centers” by Martin Filler, in *Architectural Record*, March 2009.

THE OPENING OF THE \$621 million subterranean Capitol Visitor Center in Washington luckily passed almost unremarked last December. Otherwise, writes archi-

tecture critic Martin Filler, this star-spangled boondoggle might have received star billing in the *Guinness Book of Pork*.

Designed to protect lawmakers in the wake of the shooting deaths of two Capitol policemen in 1998, the 580,000-square-foot underground lobby, security checkpoint,

history gallery, and food service complex purports to ease public access to the Capitol building. Actually, writes Filler, a regular contributor to *The New York Review of Books* and other publications, it does just the opposite. The opportunity for visiting families to roam the halls and spot a lawmaker they recognize from C-SPAN is a thing of the past. Most visitors’ Capitol experiences are now confined to the annex, where they wait in line for their tours and eat in the cafeteria. Extensive exhibits, also located in the annex,