



## Donald M. Berwick, MD, MPP Advocate for Evidence-Based Health System Reform

Brian Vastag

**W**HEN DONALD BERWICK, MD, MPP, published an article on 11 worthy aims for clinical leadership in the health care system, flaws in the fragmented US health care system had just been thrown into the light by Hillary Clinton's reform efforts (*JAMA*.1994;272:797-805). Many of those defects, epitomized by high spending, have grown. Others, such as lapses in patient safety, are finally being addressed in a systematic fashion.

As president and chief executive officer of the nonprofit Institute for Healthcare Improvement, Don Berwick is perhaps the most articulate advocate of large-scale, evidence-based changes to health care. He founded the Institute for Healthcare Improvement in 1990 to bring method to the madness of studying health care in toto. Along the way, he has filled a number of complementary roles: cofounder of the National Demonstration Project on Quality Improvement in Healthcare (1987-1991); vice chair of the US Preventive Services Task Force (1990-1996); and chair of the health services research review study section at the Agency for Health Care Policy and Research, the lead federal agency for research on health care quality, outcomes, patient safety, and costs (1995-1999).

He currently serves on the Agency for Health Care Policy and Research's National Advisory Council, and several editorial boards of several journals (including *JAMA*). He also holds a clinical professorship in pediatrics and health care policy at Harvard Medical School and is a member of the Council of the National Academies' Institute of Medicine.

*JAMA* recently spoke with him.

*JAMA: You said that you've been musing about revising your "11 aims" from 10 years ago. What have you been thinking?*

Dr Berwick: Are we making progress or not? We don't have systemic measurement systems in this country to know how we're doing on health care like we do for air quality, for instance.



Donald M. Berwick, MD, MPP

*JAMA: Given the fragmented state of health care in this country, do you see the biggest cost savings coming from reducing inappropriate care or from streamlining the whole system?*

Dr Berwick: Both are very important. Process waste is enormous; in industry they call it the third factory. For every three factories you have, one of them is fully occupied producing waste—that's the way manufacturing

works. I think it could well be true in health care.

Inappropriate care [is the consequence] of doing too many things. We know pretty clearly that if we build it, it will be used even if there's no evidence on outcome. Elliot Fisher's work last year showed that if you sort American medical markets into quintiles of expenditures, the highest quintile markets are the ones with the poorest quality (*Ann Int Med*. 2002;128:273-298). So, we don't get more by spending more in this country.

*JAMA: Another aim is to record critical information only once. Why is that so important?*

Dr Berwick: It's about modernizing the management of information, largely through appropriate use of computerization. You have to fill in your phone number every place you go, instead of just once. But the barriers to achieving integrated information systems, both in capital costs and in achieving the cultural changes, are very high.

*JAMA: What would the ideal information system look like?*

Dr Berwick: It would cross-cut care. Patients cross boundaries; they transit from one site to another, from one phase of their illness to another.

It [should be] very simple and inexpensive, if possible, because the average practice in this country with three or four doctors can't afford a big capital investment. But they can afford simple computer-based supports, especially Web-based supports.

*JAMA: Would it have to be a federal mandate or is there another way?*

Dr Berwick: That's a matter of opinion. There have to be some information standards that certify certain cod-



ing systems, that set the language in place for the systems to talk to each other. Until that happens, it's very hard for anybody to invest in a system because they don't know if they're going to invest in something that will be a dinosaur next year.

At a different level, there ought to be a government-sponsored electronic medical record suitable for office-based practices—a kind of “American medical record” anyone can have by downloading it off the Web. Then, anyone who wants to build a more expensive proprietary system could use it as the foundation. That would be a tremendous step forward in this country.

*JAMA: Is there a precedent for this kind of information exchange?*

Dr Berwick: The Internet came out of the Defense Department. There are also obviously bells and whistles that are attached to the Internet that you pay for, but the Internet was essentially given to the public. And because it was given and was standard, it's the thing everyone uses.

*JAMA: Let's talk a little bit about decreasing medication errors. My impression is that there has been some progress made in terms of automation and double-checks in the system. Is that right?*

Dr Berwick: We don't have a national measurement system, so we can't be sure. But there appear to be two areas of progress. The first is awareness. It's a rare doctor or patient who doesn't understand that there are problems and that a lot of them occur in medications.

The other area of progress is in technology. We now have experiments and proven results with computerized order entry systems. We can demonstrate that there are error-reducing technologies.

But hospitals are concerned about the cost and where they're going to find the capital for a computerized physician order entry system. The average physician practice is not automated, and I would venture to guess that most prescriptions in this country are still handwritten.

*JAMA: In a more recent article, (JAMA. 2003;289:1969-1975), you talk about phy-*

*sicians having to be leaders of innovation. You make the point that there has to be slack in a person's schedule and responsibilities to have room for innovation.*

Dr Berwick: The point is no matter whether you're the innovator scouting out the new terrain, an early adopter trying out something that the innovator tells you, or even in the early majority that is finally agreeing to change practice, there has to be some slack to do that.

*JAMA: How do small practices all the way up to HMOs build that kind of slack into how they work?*

Dr Berwick: If the practice is lucky enough to be embedded in a larger system, the larger system can arrange that and say, “we're going to give you these resources or this time to make the change.” In tiny practices, it's a real problem.

*JAMA: You mention that a lot of physicians have this idea that innovation just kind of happens.*

Dr Berwick: Some innovation does “just happen.” You pick up JAMA this week and you will find a good idea whether you're invested in it or not. Other innovations are the ones that happen around you; when your hospital puts in computerized order entry, it will be there for you. The innovation that's hard is the stuff that you have to seek yourself. Systemic innovation of that type is not self-actuating; you have to put energy in.

*JAMA: What segments of our system are most open to change?*

Dr Berwick: Biomedical science is the obvious answer. We have NIH [National Institutes of Health] and pharmaceutical companies going after a new approach, a new drug, new machinery.

I think if you're looking at system innovations—new scheduling systems, new architecture, new processes in care—a lot of these seem to arise most easily in community level hospitals, in smaller facilities where you don't have the inertia of the extraordinarily large medical centers, but where they're large enough to take some action.

*JAMA: One of the examples you give comes from my home town of Green Bay,*

*Wis. An obstetrician drove the rate of Cesarean sections down substantially.*

Dr Berwick: Oh, yes—Bob DeMott at Bellin Hospital. The rate went from 18% to 8% [as described in (*Am J Obstet Gynecol.* 1994;170:1790-1799)].

*JAMA: How did he manage to do that?*

Dr Berwick: He told me he just did it by jawboning. He first determined that it was appropriate and safe to do it; he schooled himself. He made the changes himself first, and he became his own best example. And then it was cafeteria conversations, one obstetrician at a time, and winning over the obstetrical nurses, who became great allies in that setting. So it was a personal ambassadorial effort of enormous skill.

*JAMA: That's something a lot of physicians don't think of as a way that change can propagate.*

Dr Berwick: Yes, it's funny to me how often physician leaders don't even know that they're leaders.

*JAMA: You also talk about how the agricultural extension system has been such a great success because it reduces the social distance between the innovators and the adopters.*

Dr Berwick: You have the land grant colleges or agricultural universities that are doing agricultural science, and way out there you have a farmer in a field. The problem is the professors don't have a particularly easy time talking to the farmers, and vice versa. They don't speak the same language; they're socially disconnected. The Agricultural Extension Service broke that down into steps and built bridges step by step—from the university to the regional director, from the regional director to the local field office, and from there to lead farmers and farmers.

And they also listen carefully in the other direction. The lesson here is not that the smart people are in the universities and the dumb ones are on the farms. They're smart all over.

*JAMA: There's some feedback in the system.*

Dr Berwick: Right. In health care, we do have a very good publication system but we have not taken custody of this step-by-step deployment down into



the day-to-day work of these good doctors and nurses. I've been trying to figure out if we can have some kind of tiered support system where we get the word out. Pharmaceutical companies do it; they use detailing, making sure that very last step is really taken.

*JAMA: I wonder if there's room for a new profession or job description.*

Dr Berwick: I think there is. A field service could be constructed in health

care that's very much like an agricultural service—but we don't seem to have people who understand that other than the manufacturers and drug companies.

*JAMA: In the face of the chaos of the US health care system, how do you persist in what you do?*

Dr Berwick: Chaos is opportunity. If everyone were satisfied, we wouldn't have a chance to make any changes.

My energy comes from the champions, the 5% or 10% or 15% of doctors and nurses who are totally excited and want to make changes. I get to work with the hearts and minds of the enthusiasts for the future—and that's plenty in a trillion-and-a-half dollar industry with 600 000 doctors and 3 million nurses. So I go for the volunteers and the optimists, and together we'll change things. □

## Vaccine Rumors, Funding Shortfall Threaten to Derail Global Polio Eradication Efforts

Mike Mitka

**P**OLITICS AND RUMORS IN NIGERIA are threatening to derail efforts to finally eradicate poliomyelitis around the world.

Smallpox is the only disease that has been completely banished from nature, and the goal of repeating such success with polio is tantalizingly close. In the past, polio paralyzed more than 350 000 children in more than 125 countries annually. Last year, the disease was limited to just six countries—Afghanistan, Egypt, India, Niger, Nigeria, and Pakistan—and affected only 758 individuals.

But cases are now being reported in countries surrounding Nigeria that were previously free of the disease. The World Health Organization (WHO) blamed the spread of the infection on suspension of immunization campaigns last year in Nigeria's northern states. These areas are largely Islamic and, as reported by the British Broadcasting Channel and other media, some Muslim leaders suggested the vaccine was contaminated and would cause AIDS and infertility in women. Other published reports noted some Muslim leaders in northern Nigeria also believed that these vaccines were contaminated in an effort by the United States to decimate the Muslim population.

To quell the rumors so that vaccination efforts could resume, Nigeria sent state and religious representatives in February to India, which has a large Muslim population, to have the polio vaccine tested for purity.

### VACCINE REJECTED

In mid-March the vaccine was deemed safe and vaccination resumed in some Nigerian states but not in Kano—the focal point of the immunization boycott. According to the *Voice of America*, Kano officials rejected the test results but said they were waiting for vaccines from an Asian country to resume immunization.

WHO officials said they hope that all Nigerian leaders sign off on immunization soon because the first 6 months

of the year, a time when cooler temperatures in the northern hemisphere help curtail poliovirus transmission, provide an opportune time to mobilize massive vaccination campaigns aimed at wiping out polio. In February, immunization campaigns begin in Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Ghana, Niger, Nigeria, Ivory Coast, and Togo, with the goal of vaccinating 63 million children.

WHO officials, speaking in March during a teleconference press briefing from Geneva, Switzerland, said the vaccination campaigns were generally successful. In southern Nigeria, vaccination reached about 80% of the targeted children, said Bruce Alyward, MD, the WHO's global coordinator for the



Marchers brandish umbrellas bearing the slogan "Kick polio out of Africa" during an immunization campaign in Nigeria.