Use of Genomics Hinges on Policy, Discrimination Laws

BY ERIK GOLDMAN
Contributing Writer

WASHINGTON — Genomic science is advancing rapidly on many fronts, but without solid federal policy to prevent genetic discrimination, it will be very difficult for physicians and patients to harvest the fruits of researchers' labors, said Dr. Francis S. Collins, director of the National Human Genomic Research Institute, National Institutes of Health.

"All of the original goals of the Human Genome Project have been achieved," the nation's Gene Dean said at the World Health Care Congress, a health policy conference sponsored by the Wall Street Journal. Genomic researchers are making clinically relevant and potentially cost-saving discoveries in early disease detection, pharmacogenomics, nutrigenomics, and rational gene-based drug design.

But widespread clinical application of these advances will remain a dream without adequate antidiscrimination safeguards.

"We really need this kind of protection to forward genomic medicine. The single greatest inhibition that people have about genomic medicine is the fear that the genetic information will be used against them. We've known about this hang-up for 10 years now," Dr. Collins said. He and other leaders in the genomics field have repeatedly pushed for federal legislation that would guarantee nondiscrimination in employment or health insurance coverage decisions. Though such a bill has repeatedly been introduced, Congress has failed to come through.

One particular bill (S. 1053) died in the last Congress; and was reintroduced in the current Congress as S. 306 and HR. 1227, Dr. Collins said. Though it is technically still alive, he expressed doubt that either branch of Congress will move on it this year.

The hang-up? Dr. Collins said that many in the business community are concerned that this type of legislation would provide further chum for already voracious antidiscrimination attorneys, leading to an avalanche of spurious genetic discrimination lawsuits that could paralyze corporate America.

"Some of us are concerned that if someone doesn't start to move this soon, nothing will happen," Dr. Collins said.

Dr. Elias Zerhouni, director of the National Institutes of Health, agreed. In a separate address at the conference, he said he shares Dr. Collins concern. "We really need antidiscrimination legislation." Stasis on the policy front would be a tragedy, he continued, because genomic researchers are coming up with some pretty nifty clinical stuff these days.

Among the new advances, Dr. Zerhouni and Dr. Collins cited the evolution of the Hereditary Non-Polyposis Colon Cancer (HNPCC) screening panel that allows clinicians to predict the risk of colon cancer in families that have members with this type of colon cancer. According to a cost analysis published in 2001, HNPCC screening of individuals with the cancer costs roughly $42,000 per life-year gained. Not exactly a bargain, Dr. Collins admitted.

"But remember that each patient has relatives, and each first-degree relative has a 50% risk of developing the cancer," he added. If you look at screening of parents, siblings and children of index cases, the cost drops dramatically to $7,556 per life-year gained (Ann. Intern. Med. 2001;135: 577). "This is much more cost effective, and it should be reimbursed."

A multigene assay for predicting risk of recurrence in women with node-negative, tamoxifen-treated breast cancer is another bright light on the clinical genomics horizon. This assay can accurately identify which women are most and least likely to have positive long-term recurrence-free responses to tamoxifen chemotherapy (N. Engl. J. Med. 2004;351:2817-26). Its main virtue is that it allows patients who are unlikely to respond to tamoxifen to avoid undergoing the often unpleasant chemotherapy regimen.

The assay "has been widely adopted by many oncologists, and it has a big patient satisfaction benefit," Dr. Collins said. But he acknowledged that the test is marginally cost efficient.

Another example from Dr. Collins: The emergence of assays to evaluate warfarin metabolism based on genetic variations in the function of the hepatic cytochrome P-450 (CYP-450) enzyme system has tremendous everyday potential for routine clinical practice. Assessment of the gene coding for CYP 2C9 can help physicians tailor warfarin doses to prevent bleeding episodes in patients with genetic propensities for higher-than-average responsiveness to the drug.

The test costs roughly $135 per patient, and can prevent one major bleeding episode for every 44 patients on warfarin (Am. J. Man. Care. 2003;9:493-500). Prevention of a single severe hemorrhage using the genetic test would cost roughly $6,000, the approximate cost of managing a bleeding episode. So this test, by itself, is cost neutral, "but it is a major improvement in terms of patient outcomes," said Dr. Collins, who called for a prospective trial on the subject.

According to Dr. Zerhouni, early detection of disease susceptibility years, if not decades, before symptoms emerge, and genomically guided drug therapy are the future of American medicine. "DNA sequencing costs are plummeting. This is opening up a new vista regarding our ability to understand disease."

He said he believes genomic medicine is at a critical inflection point. "We have a lot of information. We need to exploit it to intervene, not at the most costly advanced stages of symptoms, but at early presymptomatic stages where we can truly prevent diseases from manifesting."

Dr. Reed Tuckson, senior vice president for consumer health and medical care advancement at UnitedHealth Group, said there's a lot of public and physician education work that needs to be done before anyone will be able to make good on Dr. Zerhouni's vision. ■

POLICY & PRACTICE

ACP, AMA Back 'Partnership' Bill

States would get federal support to experiment with covering the uninsured and pursuing disease management strategies under the bipartisan Health Partnership Act (S. 2772). The bill was introduced last month and has the support of the American College of Physicians, the American Medical Association, and the National Association of Counties, and would establish a Health Care Expansion and Improvement Commission at the Health and Human Services department. The commission could approve a variety of options that states could pursue to expand access to health care, including tax credit expansions, expansions of Medicaid or State Children's Health Insurance Programs (SCHIP), creation of pooling arrangements, single-payer systems, and health savings accounts. If the legislation were enacted, it would allow states to do an "end run" around Washington's gridlock on covering the uninsured, said Robert B. Doherty, senior vice president, government affairs and public policy, for ACP. Like the physician's code of "first, do no harm," the experiments could not result in diminished coverage for anyone, Mr. Doherty said.

More Employees Decline Coverage

More Americans are declining their employers' offer of health insurance as premiums continue to rise, according to a study by the Robert Wood Johnson Foundation. Approximately 3 million fewer workers who were eligible for employer-sponsored health insurance enrolled in 2003, compared with 1998. The national increase in individual premiums from 1998 to 2003 was $1,027, a 42% increase after adjustments for inflation. In 1998 dollars the amount was $2,454; with the adjustment it stood at $3,481 in 2003, the foundation said in a statement. States with the biggest percentage drops include New Jersey, –12%; Nebraska, –11%; Wisconsin, –9%; Colorado, –9%; and Iowa, –9%. The survey used trend data from 1998 to 2003 from the federal Medical Expenditure Panel Survey–Insurance Component, collected and distributed by the Agency for Healthcare Research and Quality (AHRQ).

Off-Label Scrips Common

More than one in five prescriptions (21%) for commonly used medications were written for off-label indications, according to a nationally representative study. Further, 15% of those off-label prescriptions lacked any scientific evidence of efficacy, David D. Radley of Dartmouth University and his colleagues wrote in the Archives of Internal Medicine. Off-label prescription was rare among medications for glycemic control in diabetes (less than 1%), infrequent among analgesics (6%), and in drugs to lower lipid levels (7%). Off-label prescription was most common among cardiac drugs (antianginals, 46%; antiarrhythmics, 39%; and anticoagulants, 46%) as well as anticonvulsants, 46%; and asthma drugs, 42%. "Off-label prescription with limited or no scientific support was more common than supported off-label use in all therapeutic classes except diabetes therapies," the authors wrote. However, many of the off-label prescriptions "represent a logical extension of the FDA-approved indications," the authors wrote. Off-label prescribing can lead to innovative treatments, but "policy makers must begin to consider strategies for mandatory postapproval surveillance" to curtail dangerous or wasteful practices, the authors concluded. The study was supported by AHRQ.

Medicare Formulary Guidance

If officials at a Medicare Part D drug plan change the preferred or nonpreferred formulary drugs, remove dosage forms, or exchange therapeutic alternatives, they must allow beneficiaries currently taking the drug to be exempt from the changes for the rest of the year, according to guidance from the Centers for Medicare and Medicaid Services. Abby L. Block, director of the CMS Center for Beneficiary Choices issued a memo to Part D sponsors in April outlining policies for formulary changes made after a beneficiary has signed onto a plan at the beginning of the plan year. In addition, Part D plans can only change therapeutic categories and classes in a formulary at the beginning of each plan year, except to account for new therapeutic uses or newly approved drugs. CMS also noted that after March 1, Part D drug plans are only allowed to make "maintenance changes" to their formulary, such as replacing a brand name drugs with a new generic drug. All proposed formulary changes, except for expansions, must be submitted to CMS for review and approval, according to the memo. "Prescription drug therapies are constantly evolving, and new drug availability, new medical knowledge, and new opportunities for improving safety and quality in prescription drug use at a low cost will inevitably occur over the course of the year," Ms. Block said in the memo to Part D sponsors.

Rare Disease Studies

Officials at the National Institutes of Health have launched the first clinical studies that are part of its Rare Diseases Clinical Research Network. The network has received a total of $71 million in 5-year funding awards to study rare diseases. In the next few months, more than 20 studies are expected to open in sites around the world. In one example, an investigator at the Johns Hopkins Vasculitis Center in Baltimore will conduct a study of giant cell arteritis. "By studying the genetic component of these rare diseases, we hope to be able to better predict the course of the illnesses and provide more effective, personalized treatments for those afflicted," Dr. Elias A. Zerhouni, NIH director, said in a statement.

—Nancy Nickell