Lack of Antidiscrimination Law Hobbles Genomics

'Gene dean' says Congress has repeatedly failed to act on a bill to guarantee nondiscrimination.

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 he warned that 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.

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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.

"Physicians do not have time for abstract theoretical discourses on the genomics revolution. They want practical answers on how it applies to patient care and how it pertains to their daily practices. The learning systems need to meet these needs," Dr. Tuckson said. He added that by and large, physicians and the health care system are not prepared to deal with the challenges of genomics. ■

FDA Cracking Down on Unapproved Prescription Drugs

BY ALICIA AULT
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The Food and Drug Administration announced that it is renewing efforts to ensure that all drugs currently sold by prescription either go through its formal approval process or be taken off the market.

The agency has periodically targeted some of these products using its existing authority. Now, the FDA has issued more formal guidance that spells out for manufacturers how it will prioritize enforcement, and what route they can take to prove the safety and efficacy of their products.

There are many reasons why unapproved products are on the market, said Dr. Steven Galson, director of the FDA's Center for Drug Evaluation and Research, at a press briefing sponsored by the agency.

Most of these products were marketed before passage of the 1962 Food, Drug, and Cosmetic Act, which required formal proof of safety and efficacy. Or their makers may simply have begun selling the products without seeking the agency's approval, he said, noting that the FDA will issue a new drug code (NDC) number for a product even if it was never approved.

In very few cases, the products are grandfathered in under existing laws, agency officials said.

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Those initially flagged for attention include products that are potentially hazardous, lack evidence of effectiveness, or appear to be fraudulent.

If the manufacturers do not seek approval, they will be subject to enforcement action, Dr. Galson said. But in most cases, the FDA will not remove a drug from the market if it has been shown to have some medical utility. Examples include some manufacturers' levothyroxine and phenobarbital products.

"While we want to ensure continued patient access to necessary treatments, as a physician I feel strongly that patients expect and deserve all their prescription medicines to be approved by the FDA," said Dr. Andrew C. von Eschenbach, acting FDA commissioner, in a statement.

The agency estimates that less than 2% of prescription drugs have not received its imprimatur. That still means potentially thousands of products that are not approved.

Many of the drugs are cough and cold preparations that include pheniramine maleate and dexbrompheniramine maleate, or single-ingredient narcotics such as codeine phosphate and oxycodone HCl. Sedatives like chloral hydrate are also unapproved.

The agency recently announced that it is requiring makers of carbinoxamine-containing products to seek approval by late September. Any unapproved products still on the shelves at that date will be ordered off the market, said Deborah M. Autor, FDA associate director for compliance policy. Carbinoxamine is used in cough and cold treatments, mostly for children, that have been associated with 21 reported deaths since 1983.

Physicians, pharmacists, and patients can go to the FDA's Web site (www.accessdata.fda.gov/scripts/cder/drugsatfda) to determine if a drug is approved. The database includes only approved medications, so unapproved products will not be listed. ■