**Pressure Grows to Create Drugs for ‘Superbugs’**

**By** [**BARRY MEIER**](http://topics.nytimes.com/top/reference/timestopics/people/m/barry_meier/index.html)

Government officials, drug companies and medical experts, faced with outbreaks of [antibiotic](http://topics.nytimes.com/top/news/health/diseasesconditionsandhealthtopics/antibiotics/index.html?inline=nyt-classifier)-resistant “superbugs,” are pushing to speed up the approval of new antibiotics, a move that is raising safety concerns among some critics.

The need for new antibiotics is so urgent, supporters of an overhaul say, that lengthy studies involving hundreds or thousands of patients should be waived in favor of directly testing such drugs in very sick patients. Influential lawmakers have said they are prepared to support legislation that allows for faster testing.

The [Health and Human Services Department](http://topics.nytimes.com/top/reference/timestopics/organizations/h/health_and_human_services_department/index.html?inline=nyt-org) last month announced an agreement under which it will pay $40 million to a major drug maker, [GlaxoSmithKline](http://topics.nytimes.com/top/news/business/companies/glaxosmithkline_plc/index.html?inline=nyt-org), to help it develop medications to combat antibiotic resistance and biological agents that terrorists might use. Under the plan, the federal government could give the drug company as much as $200 million over the next five years.

“We are facing a huge crisis worldwide not having an antibiotics pipeline,” said Dr. Janet Woodcock, director of the Center for Drug Evaluation and Research at the [Food and Drug Administration](http://topics.nytimes.com/top/reference/timestopics/organizations/f/food_and_drug_administration/index.html?inline=nyt-org). “It is bad now, and the infectious disease docs are frantic. But what is worse is the thought of where we will be five to 10 years from now.”

Annually, tens of thousands of Americans die from infections, largely acquired in hospitals, that are resistant to antibiotics, experts say.

Doctors, faced with dwindling options and little time to decide, are often left with agonizing choices over how to save a patient’s life. For example, some doctors, in extreme cases, are again using Colistin, an older antibiotic that was largely abandoned years ago because of the damage it can cause the kidneys.

“A drug like Colistin would not be developed today because it is too toxic,” said Dr. Helen W. Boucher, an infectious disease expert at Tufts University in Boston.

Under a plan proposed by a professional medical group, the Infectious Disease Society of America, new antibiotics approved through quicker testing would carry a special label specifying that their use be limited to very sick patients.

But critics of the plan argue that merely putting a restrictive label on a medicine is not enough, and that limited tests might not be adequate to determine a drug’s safety and effectiveness. They say they worry that the new medications, without the more comprehensive testing, could then be used on healthier patients who do not necessarily need them.

“There is really no way of knowing how these drugs are going to perform,” said Dr. John H. Powers, a former F.D.A. antibiotics reviewer who is now an associate professor at George Washington University in Washington.

The overuse of antibiotics in people and animals, often for conditions for which the drugs are ineffective or not needed, is seen as a driving force in the development of resistant bacteria. As these organisms have evolved and developed resistance, the development of new drugs has not kept pace.

Pharmaceutical companies have frequently chosen to put their resources into developing drugs with bigger payoffs than antibiotics. Also, the F.D.A., after a scandal several years ago involving an antibiotic called Ketek, which the agency approved on the basis of fraudulent data and was subsequently [linked to severe liver damage](http://www.nytimes.com/2006/06/30/health/30fda.html), has been cautious in approving new drugs, infectious disease experts say.

“It has been progressively more difficult to usher a new anti-infective to market,” said Dr. Vance G. Fowler Jr., an infectious disease expert at Duke University.

Efforts to develop new antibiotics are not limited to the United States. In Europe, several big producers including GlaxoSmithKline and AstraZeneca recently became part of a joint government and industry initiative to develop antibiotics that kill resistant strains of bacteria. As part of the project, companies are pooling their resources and research data.

Along with the recent grant to GlaxoSmithKline, federal officials have also been giving grants to drug makers worth tens of millions of dollars to help them underwrite the costs of developing new antibiotics.

In addition, Congress passed legislation last year that gives producers five more years of market exclusivity for effective drugs. The measure also directed the F.D.A. to review and approve new antibiotics more quickly, though it did not give specifics.

In April, two senators, Michael F. Bennet, Democrat of Colorado, and Orrin Hatch, Republican of Utah, said they saw legislation as a way to circumvent the time it takes for the Food and Drug Administration to change its testing procedures. A letter they sent to the F.D.A. highlighted the plan championed by the Infectious Diseases Society of America.

Under the plan, a new antibiotic, after testing in a small group of healthy patients to show that it is capable of killing regular bacteria, would be tested next, not in a larger group of healthy patients, but in those infected with drug-resistant strains of bacteria.

Dr. Woodcock of the F.D.A. likened the speedier testing to the one used for orphan drugs, medications used to treat rare conditions. Unlike an orphan drug, however, an antibiotic might eventually be used in millions of people, an issue that even experts supporting faster testing acknowledge can produce complications.

For one thing, testing a drug in patients infected with resistant bugs may not yield strong conclusions about the medication, because it can be hard to determine whether a patient’s death or recovery is related to the drug, Dr. Fowler of Duke said. But he added that he believed if such studies were rigorously done they could provide answers.

“It is not perfect, but it can provide a body of evidence in an environment in which we have little or few options,” he said.

Another concern is what will happen, after a new antibiotic wins special approval for limited use, to prevent the next generation of antibiotics from being overused.

Some experts have suggested that government could provide financial incentives to drug makers to limit how they market their products. And [infectious diseases](http://health.nytimes.com/health/guides/specialtopic/travelers-guide-to-avoiding-infectious-diseases/overview.html?inline=nyt-classifier) experts say they believe hospitals already have an incentive to conserve such drugs.

“The last thing we want would be for a new drug to be overused,” said Dr. Boucher of Tufts University, who is also a director of the infectious disease society.

Dr. Woodcock of the F.D.A. said that a drug company, after winning limited approval, could then run the types of standard studies that, if successful, would allow it to market the drug to broader patient groups or for other uses.

One producer, GlaxoSmithKline, said that it would seek to limit the use of any new antibiotics it develops by publishing data, when possible, on rates of use at hospitals and by not licensing a drug’s use in farm animals.

But some experts, like Dr. Powers, the former agency reviewer, said that drug companies might have little incentive to run broader tests once a medication received limited approval. Unless strong safeguards are in place, the new drugs might become widely prescribed.

“The big problem is controlling the marketing,” said Dr. Steven E. Nissen, a cardiologist at the Cleveland Clinic and a frequent critic of the F.D.A. “Companies can get a drug on the market for a narrow indication and before you know it, it is being used in everybody.”

*This article has been revised to reflect the following correction:*

***Correction: June 3, 2013***

*An earlier version of this article incorrectly described the toxicity of an older antibiotic, Colistin. Its principal toxicity is to the kidneys, not the liver.*