

Drug Safety and Drug Efficacy: Two Sides of the Same Coin

Robert C. Young,¹ Michael A. Friedman,² Richard L. Schilsky,³ and Ellen V. Sigal⁴

This year, the 110th Congress of the United States will consider a drug safety legislation that could have a direct effect on the entire biomedical community. The legislation could affect the ease with which drugs can be developed, proven safe and effective, and reach the public in a timely manner. The Food and Drug Administration (FDA) plays a pivotal role in analyzing the benefits and risks of new therapies and also must ensure continued monitoring of products once they reach the market. Without an optimally functioning FDA, new therapies discovered by some of the world's most talented researchers and developed by our pharmaceutical industry will have little chance to reach patients in a timely manner. A new legislation must be carefully considered to prevent negative unintentional consequences. Instead, the legislation must effectively improve drug safety, ensure access to new drugs, and foster the development of innovative new treatments.

Efforts to increase the effectiveness and efficiency of FDA are important and well justified. The agency is currently facing the challenge of strengthening the review of product safety at both pre-approval and post-marketing stages. Several months ago, a committee of academic scientists and clinicians, research advocates, and representatives of the patient community was convened to recommend ways in which policy makers in the Congress and FDA could further strengthen product evaluation. The resulting report, *Drug Safety and Drug Efficacy: Two Sides of the Same Coin*, released March 9th,⁵ is a proposal for improving drug safety, ensuring new drug access and strengthening the FDA.

In the view of this committee, drug efficacy and safety should continue to be evaluated simultaneously by the existing FDA division that is most familiar with the product under review, rather than by a separate center or agency. Furthermore, an expanded and systematic approach to safety surveillance should be implemented. Post-marketing surveillance should utilize a variety of sources to routinely identify and obtain accurate data, have the computational and statistical ability to analyze large-scale information sets, and incorporate emerging scientific tools to improve the methods of distinguishing and describing safety and efficacy signals. FDA currently lacks the resources and personnel to fully integrate the science and technology necessary to develop a systematic approach to safety surveillance. To ensure that FDA has adequate resources,

there must be an appropriate commitment of public funds by congress and not exclusively through increases in funds required from the pharmaceutical industry. In addition to resources, FDA will require employee training programs and a commitment to the advancement of science through the Critical Path Initiative⁶ to strengthen safety monitoring. Although the current passive surveillance method does provide useful information, it is not as efficient as it could be in detecting emerging safety and efficacy data; it should be strengthened. In addition, an automated post-marketing system of drug monitoring should be created using existing public and private databases. Such a system will improve the agency's ability to identify risks of new marketed products in a timelier manner and to evaluate risks along with the health benefits provided by the product.

A benefit-risk approach across a product life cycle is the cornerstone of drug development and should be the foundation of drug regulation as well. This is particularly true with regard to drugs for serious and life-threatening diseases like cancer, refractory cardiovascular disease, and neurodegenerative diseases. To focus solely on drug safety without consideration of drug benefit, the severity of the underlying disease, the effectiveness of the product, and the availability of alternative therapies, risks creating a chilling effect on the development of new treatments for patients most in need of innovation.

As Congress considers drug safety legislation, it is an opportunity to strengthen and increase the capabilities and efficiency of FDA in all phases of its work. Simply stated, Congress must invest more in the FDA if it expects it to properly carry out its mandate. Whereas recent policy recommendations contain elements that would provide assistance to an overburdened agency, proposals focused on increasing FDA authority and regulatory oversight do not fully address ways to insure innovation and improvements in overall public health.

The goal of the report commissioned by the committee is to provide lawmakers with a balanced perspective from a broad group of physician investigators and advocates who have extensive experience in the field of drug development for patients with serious diseases. The new legislation must achieve the goals of enhancing the drug approval and monitoring process and optimizing the productivity of FDA. Unintentional consequences, such as restricting or slowing patient access to life-saving treatments, or discouraging innovative product development, would be detrimental for the American public. Over-regulation and subsequent slowing of the drug approval process increases the cost of medical care, thereby decreasing access to medications because of their expense. To best position FDA for continued success, the committee encourages members

Authors' Affiliations: ¹Fox Chase Cancer Center, Philadelphia, Pennsylvania; ²City of Hope, Duarte, California; ³University of Chicago, Chicago, Illinois; and ⁴Friends of Cancer Research, Washington, District of Columbia
Received 3/14/07; accepted 3/14/07.

Requests for reprints: Ellen V. Sigal, Friends of Cancer Research, 2231 Crystal Drive, Suite 200, Arlington, VA 22202. Phone: 202-944-6710; Fax: 703-302-1568; E-mail: esigal@sigal.com.

© 2007 American Association for Cancer Research.
doi:10.1158/1078-0432.CCR-07-0608

⁵ <http://www.focr.org/drugsafetyreport.htm>

⁶ <http://www.fda.gov/oc/initiatives/criticalpath/>

of Congress and FDA officials to implement policies to address the following recommendations:

1. Continually and simultaneously evaluate safety and efficacy when determining public access to and marketing of new products
 - 1.1. Ensure that the regulatory process reflect the essential balance of benefit and risk that is fundamental to all medical decision making;
 - 1.2. Discourage new policies that duplicate existing mechanisms or unnecessarily slow FDA evaluations of new agents;
 - 1.3. Ensure that up-to-date information is accessible to patients and healthcare providers at the time a prescription is written.
2. Improve information technology and increase training to strengthen the effectiveness of the FDA
 - 2.1. Improve informatics systems within FDA;
 - 2.2. Increase training of FDA personnel to enhance agency effectiveness and standards;
 - 2.3. Capitalize on the unique expertise at FDA;
 - 2.4. Minimize future leadership gaps at FDA.
3. Enhance existing infrastructure for adverse event reporting and analysis to improve post-market safety monitoring
 - 3.1. Improve the existing tools for adverse event reporting to enable systematic post-market surveillance;
 - 3.2. Engage public-private partnerships to aid in safety monitoring and data management;
 - 3.3. Examine electronic medical records as a potential data source to enhance widespread systematic tracking for the Adverse Event Reporting System;
 - 3.4. Equitably share funding for programs to ensure the safety and efficacy of new products between public and private sources.
4. Advance current scientific opportunities to create a stronger, safer, and science-based FDA
 - 4.1. Increase support for the Critical Path Initiative to modernize FDA;
 - 4.2. Prioritize discovery, evaluation, validation, and clinical application of new biomarkers to improve drug evaluation and refine drug prescribing.

It is the view of the report's authoring committee that with proper advancement, support, and leadership, FDA can move into the 21st century and firmly remain the gold standard of science-based drug review and safety monitoring.

Clinical Cancer Research

Drug Safety and Drug Efficacy: Two Sides of the Same Coin

Robert C. Young, Michael A. Friedman, Richard L. Schilsky, et al.

Clin Cancer Res 2007;13:2533-2534.

Updated version Access the most recent version of this article at:
<http://clincancerres.aacrjournals.org/content/13/9/2533>

E-mail alerts [Sign up to receive free email-alerts](#) related to this article or journal.

Reprints and Subscriptions To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions To request permission to re-use all or part of this article, use this link
<http://clincancerres.aacrjournals.org/content/13/9/2533>.
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.