New FDA Initiatives in Response To the Problem of Counterfeit Drugs

Marvin M. Goldenberg, PhD, RPh, MS

BACKGROUND

From its beginning, the mission of the Food and Drug Administration (FDA) has been one of consumer protection. As a consequence, the agency has recently initiated several major consumer protection programs that are now administered by other agencies, including consumer programs that have been transferred to the FDA from other agencies, such as National Food Safety Programs, the Food Safety and Inspection Service, the Food Protection Agency, and the Center for Food Safety and Applied Nutrition.

In 2004, the FDA took steps to keep the U.S. drug supply secure against increasingly sophisticated criminal efforts to introduce counterfeit drugs. Although counterfeiting is not now widespread in the U.S. drug market, counterfeit operations in the U.S. have been on the rise, and more of these involve finished drug products that look just like the real product. Consequently, the FDA is investigating an increasing number of cases of such activity.

Sometimes counterfeit drugs slip through the supply chains, usually when they are sold to a second wholesaler or are otherwise diverted along the way. At other times, drugs are tampered with when they are bought in bulk and repackaged later. In some instances, the activities involve well-organized criminal operations that have introduced finished drug products that resemble legitimate drugs but that contain only inactive, incorrect, or contaminated ingredients or improper doses.

An FDA task force, created in July 2003, issued a report that identified steps that it, other government agencies, and the private sector could take to minimize the risks to the public from counterfeit medications entering the nation’s drug-distribution system. The task force met with and heard from security experts, federal and state law enforcement officials, technology developers, manufacturers, wholesalers, retailers, consumer groups, and the general public.

THE FEBRUARY 2004 REPORT:

On February 18, 2004, the FDA issued a report that identifies ways to combat the growing public health problem of counterfeit prescription drugs in the nation. The comprehensive report highlights ways to ensure that the nation’s drug-distribution system protects Americans from counterfeit drugs. These measures address six critical areas:

1. implementing new technology to protect legitimate drugs against tampering or replacement with counterfeits.
   a. adopting reliable modern tracking and tracing technology. These measures include color-shiftinng inks, holograms, fingerprints, taggants (detection of explosives), or chemical markers embedded in a drug or its label.
   b. using electronic track-and-trace technology to accomplish and surpass the goals of the Prescription Drug Marketing Act. Modern electronic technology is rapidly approaching the state at which it can reliably ensure that a drug has been manufactured safely and distributed under conditions that have not compromised its potency.
   c. enforcing stronger anti-counterfeiting measures by the state regulators of drug wholesalers and distributors. Because states license and regulate wholesale drug distributors, they have an important role in regulating the drug-distribution supply chain.
   2. increasing criminal penalties to deter counterfeiting and to more adequately punish those convicted.
   3. adopting secure business practices by all participants in the drug supply chain. Effective protection against counterfeit drugs necessitates actions by drug manufacturers, distributors, and dispensers in securing their business practices by ensuring the legitimacy of business partners, refusing to do business with persons of unknown or dubious background, taking steps to ensure physical security, and identifying an individual or team in the organization with primary responsibility for ensuring that effective security practices are implemented.
   4. developing a system that helps to ensure timely and effective reporting of counterfeit drugs to the FDA and that strengthens the ability of the FDA, other regulatory agencies, and the other participants in the drug-distribution system to respond rapidly to such reports. The FDA intends to build on

Dr. Goldenberg is Executive Director of Pharmaceutical and Scientific Services for MMG Associates in Westfield, New Jersey, and writes the Pharmaceutical-Approval Update column. His e-mail address is mmgpotter@comcast.net.
lessons learned from working with manufacturers in past counterfeiting experiences to determine how industry and agency collaboration can be strengthened. The FDA plans to take new steps to encourage health professionals to report suspected counterfeit drugs to its MedWatch system.

6. educating consumers and health professionals about the risks of counterfeit drugs and how to respond if they encounter such products. The FDA plans to develop educational materials, including new tools on its Web site, new public service announcements, and new educational partnerships.

7. collaborating with foreign stakeholders to develop strategies to deter and detect counterfeit drugs globally. Counterfeit drugs are a global challenge to all nations, and criminal counterfeiting operations are increasingly operating across national borders. The FDA intends to work with the World Health Organization, Interpol, and other international public health and law enforcement organizations to develop and implement worldwide strategies to combat counterfeit drugs.

Implementing these steps will help to prevent the introduction of counterfeit drugs into the U.S. drug-distribution chain; facilitate the identification of counterfeit drugs; minimize the risk and exposure of consumers to counterfeit drugs; and avoid unnecessary additional costs in the prescription drug-distribution system and unnecessary restrictions on lower-cost sources of drugs.

TECHNICAL ADVANCES

The FDA indicates that most counterfeit drugs are produced in the U.S. and are substituted for legitimate drugs somewhere between the manufacturer and the retailer. New technology could be used to improve the security of the nation’s drug supply, such as the use of tamper-evident packaging and radiofrequency identification techniques that can trace a drug’s movement from factory to pharmacy. The FDA wants drug manufacturers, wholesalers, distributors, and pharmacies to adopt new technologies, including imbedded computer chips that can transmit identifying information by 2007. Radiofrequency systems tag medications with a chip containing information about where a drug was manufactured and where it was shipped. Each time the drug moves farther down the user chain, the additional information would be added to the chip, which can be scanned by distributors and pharmacists to make sure the product is legitimate. The chips, smaller than a grain of rice, would be attached to drug labels or boxes or even imbedded in the medication itself. Tests would be required to determine whether the chip would interfere with the effectiveness and quality of the products.

Most pharmaceuticals are sold directly from drug-makers to wholesalers, which then fill orders from customers such as hospitals and pharmacies. Sometimes drug wholesalers and distributors buy and sell prescription drugs among themselves to fill spot shortages or to take advantage of spreads in prices. In some instances, scammers have introduced illegally imported versions of cut-price drugs or outright fakes through this backdoor method.

The FDA hopes to be able to rely on improved technology and to alert physicians in the battle to keep the drug supply safe from counterfeit medications. Physicians are encouraged to report suspected counterfeit drugs to the FDA’s MedWatch system. The American Medical Association supports the FDA’s new blueprint to increase anti-counterfeiting efforts.

THE NOVEMBER 2004 REPORT: ENSURING CORRECT DRUG IDENTIFICATION

In November 2004, the FDA issued another report in response to inquiries focusing on whether certain regulatory requirements, including those related to labeling, electronic records, and product quality, apply to pharmaceutical manufacturers, repackagers, relabelers, distributors, retailers, or others who participate in feasibility studies and pilot programs (hereafter collectively referred to as a “study” or “studies”) using Radiofrequency Identification (RFID) tags for drugs. The policy is as follows.

To the extent that it may be necessary, FDA intends to exercise enforcement discretion (described next) for studies that fall within all of the following parameters:
• A manufacturer, repackager, relabeler, distributor, retailer, or others acting at their direction will attach RFID tags (chips and antennae) only to immediate containers, secondary packaging, shipping containers, and/or pallets of drugs that are being placed into commerce. There is no limit to the number of tags or readers that may be used in the study.

• The drugs involved will be limited to prescription or over-the-counter finished products. The drugs involved will not include those approved under a Biologics License Application or protein drugs covered by a New Drug Application. The study need not have a pre-determined time limit or endpoint, except that tag placement for the study will be completed by December 31, 2007.

• RFID will be used only for inventory control, tracking and tracing of products, verification of shipment and receipt of such products, or finished product authentication.

• RFID will not be used to fulfill existing FDA regulatory requirements (e.g., fulfillment of labeling or Current Good Manufacturing Practice requirements, provision of chemistry, manufacture, and control information, storage of information in fulfillment of a regulatory requirement, or performance of label and product reconciliation).

• RFID will not be used in lieu of current labeling control systems to ensure correct labeling processes.

• The study will use “passive,” “semi-active,” or “active” tags.

• Information will be written to the tag at the time that the tag is manufactured (e.g., “read only” tags), after the tag is manufactured but before it is affixed to a drug’s container (e.g., “read-write tags”), or after the tag is affixed to a drug’s container. The tags will contain a serial number (e.g., an electronic product code) that uniquely identifies the object to which the tag is attached, and may also contain other information such as storage and handling conditions, information from the FDA approved label and labeling, lot number, and product expiration date.

• The tags will not contain or transmit information for the health care practitioner.

• The tags will not contain or transmit information for the consumer.

• The tags will not contain or transmit advertisements or information about product indications or of-label product uses.

• A seal containing a logo, an inventory control message unrelated to the product (e.g., a message informing the custodian that the package contains an RFID tag), and/or a unique serial number may be placed over the RFID tag or elsewhere on a drug’s immediate container, secondary packaging, and/or shipping container.

• The addition of the RFID tag and seal will not block, obscure, or alter any of the product's existing and approved label and labeling information.

• The RFID tag will not substitute for, replace, or interfere with a linear bar code required pursuant to 21 C.F.R. [Section] 201.25.

• Participants will “read” the tags as needed to identify the product and/or conduct the study.

CONCLUSION

The FDA wishes to secure the safety of the U.S. drug supply but does not have the legal authority or resources to ensure the safety and efficacy of drugs purchased from other countries outside its domestic drug-distribution system or from unregulated Internet sites that are not run by pharmacies licensed and regulated by the U.S. The FDA encourages consumers to minimize their risk by purchasing only from U.S. state-licensed pharmacies. If consumers must use the Internet, they should visit only Web sites sponsored by state-licensed pharmacies that are in good standing with their home states.

The following changes are expected to be available as early as this year:

• more severe criminal penalties

• improved education of health professionals and consumers

• adoption of model rules for state licensures of wholesale distributors in some states

• FDA guidance on application and notification procedures for changes in products, packaging, and labeling for authenticating drugs

• increased frequency of FDA inspections of repackaged products

• increased international collaboration

With these policy changes, it is expected that the FDA will become the driving force in regulating the use and importation of counterfeit drugs into the U.S. The agency will be able to provide preventive measures to rid the nation of counterfeit drugs that pose real public health and safety concerns in America today.

REFERENCES


