How FDA Reviews Proposed Drug Names

During the past two decades, the Food and Drug Administration (FDA) has worked to increase the safe use of drug products by minimizing user errors attributed to unclear nomenclature, labels, labeling, and packaging design of drug products. CDER has received approximately 126,000 reports of medication error is from 2000 to 2009, some of which are directly related to the similar sound and appearance of drug name pairs. Due to these postmarketing nomenclature-related events, the Center for Drug Evaluation and Research (CDER) has developed and refined internal procedures for evaluating, prior to the marketing of a drug, the potential for a proposed proprietary name (i.e., "brand name") to cause or contribute to medication errors as part of the Center's focus on the safe use of drug and therapeutic biologic products.

CDER considers the potential for confusion between an Applicant's proposed proprietary name and the proprietary and established names of drug products existing in the marketplace and pending products currently under review by the Center for Drug Evaluation and Research (CDER). The review of proposed proprietary names is conducted by the Division of Medication Error Prevention and Analysis (DMEPA) in CDER's Office of Surveillance and Epidemiology (OSE). DMEPA, in consultation with the Division of Drug Marketing, Advertising, and Communications (DDMAC) and with input from pertinent disciplines involved with the review of the application, determines the acceptability of proposed proprietary names for products marketed under an application (i.e., IND, NDA, BLA, and ANDA). DMEPA does not review proprietary names of products marketed under an OTC monograph or those of a distributor or repacker. DMEPA completes over five-hundred proprietary name reviews annually.

In addition, established names (i.e., nonproprietary or generic name) do not undergo review by CDER. The United States Adopted Names Council (USAN) is responsible for selecting a United States Adopted Name (USAN) for drugs marketed in the U.S. Unlike proprietary names, established names have a common, simple word element (a "stem") incorporated in the names of all members of a group of related drugs, and are thus designed to have some similarity to one another.

It is important for CDER to screen proposed proprietary names before marketing because accurate interpretation of a product's name is essential to ensure that the correct product is procured, prescribed, prepared, dispensed, and administered to the patient. In the U.S. healthcare system, healthcare practitioners rely on a product's name as a critical identifier of the appropriate therapy in a market of thousands of products. Therefore, product names that look or sound-alike can lead to medication errors and, potentially, to patient harm by increasing the risk of a healthcare practitioner's misprescribing or misinterpreting the correct product name, dispensing and/or administering the wrong product, or dispensing it incorrectly.

CDER review of proprietary names includes consideration of both safety and promotional aspects of a name. If a proposed proprietary name is determined to be promotional or represent a source of medication error, the name is found unacceptable for

use. The following sections provide a snapshot of elements used in the Agency's proprietary name review process.

Promotional Review

CDER's Division of Drug Marketing, Advertising, and Communications (DDMAC) evaluates proposed proprietary names to determine if they are overly fanciful, so as to misleadingly imply unique effectiveness or composition, as well as to assess whether they contribute to overstatement of product efficacy, minimization of risk, broadening of product indications, or making of unsubstantiated superiority claims.

Safety Review

CDER's Division of Medication Error Prevention and Analysis (DMEPA) conducts the safety review of a proprietary name. This evaluation involves methods that generate a list of names that could be confused with the proposed proprietary name as well as methods to test the likelihood of confusion between these names and the proposed proprietary name.

When reviewing a proposed proprietary name, DMEPA considers the spelling of the name, pronunciation of the name when spoken, and appearance of the name when scripted throughout the medication use system (e.g., prescribing, dispensing, administering). The spelling of the proposed proprietary name is compared with the proprietary and established names of existing and proposed drug products because similarly spelled names may have greater likelihood to sound similar to one another when spoken, or look similar to one another when scripted.

In addition, DMEPA examines the orthographic appearance of the proposed name using a number of different legible handwriting samples. Handwritten communication of product names has a long-standing association with product name confusion, often leading to medication errors.

The expertise gained from DMEPA's root-cause analysis of postmarketing medication errors is applied to identify sources of ambiguity within the name that could be introduced when scripting (e.g., "A" may look like "C"), along with other orthographic attributes that determine the overall appearance of the product name when scripted. Additionally, since spoken communication of medication names is common in clinical settings, the pronunciation of the proposed proprietary name is compared with the pronunciation of other product names, accounting for the potential for phonological error due to predictable phonological variance.

DMEPA not only considers the potential for a name to be spelled similarly and/or sound similar to the name of a currently marketed product or one that is in the approval pipeline, but also considers the potential for the proposed proprietary name to inadvertently function as a source of error for other reasons, such as by suggesting a dosage form or route of administration or contains a USAN stem. Consideration is given

to the proposed product's characteristics (including its intended use, dosage form, strength, and route of administration) because the product characteristics provide a context for communication of the product name and ultimately determine the use of the product in the usual clinical practice setting.

The following techniques are used in the analysis of a proposed proprietary name.

Computational Methods

The majority of names with similarity to a proposed proprietary name are identified through database searches. A variety of publicly available databases and resources containing product names are used to identify similar names. In addition, DMEPA identifies other potentially similar names using a computerized method of identifying phonetic and orthographic similarities between product names using Phonetic and Orthographic Computer Analysis (POCA). This software uses complex algorithms to select a list of names from a database that have some similarity (phonetic, orthographic, or both) to the trademark being evaluated. Under PDUFA IV, FDA has made the source code for POCA available to public parties for further development (pocasourcecoderequest@fda.hhs.gov).

Medication Error Data

If a proposed name is for an active ingredient(s) is already marketed domestically or abroad, DMEPA searches databases containing medication error reports with the goal of identifying relevant information that might help to inform the analysis of the proposed name.

Name Simulation Studies

DMEPA performs simulation studies, which are limited to healthcare providers employed by the FDA, to test the response of healthcare practitioners to proposed names. FDA health professionals (nurses, pharmacists, physicians, etc.) are presented with written and verbal prescriptions to interpret in an attempt to simulate the prescription ordering process.

Name Assessments Conducted or Commissioned by the Applicant

Independent name assessments are sometimes submitted by Applicants. DMEPA reviews and considers these assessments when evaluating proprietary names. DMEPA compares its proprietary name risk assessment with the findings of the risk assessment submitted by the Applicant. When DMEPA's conclusion regarding the acceptability of the proposed name differs from the conclusion of external assessment, an explanation of the differences is provided to the Applicant.

Failure Mode and Effects Analysis (FMEA)

DMEPA uses FMEA, a systematic prospective method, to examine the nomenclature of a product for possible ways in which a failure (i.e., an error) can occur once a comprehensive list of potentially similar names is developed.[1] To identify potential failure modes, the proposed proprietary name is compared to all of the names gathered during the safety review. Because product name confusion can occur at any point in the medication use process, DMEPA considers the potential for confusion throughout the entire U.S. medication use process, including product procurement, prescribing/ordering, dispensing, administration, and monitoring the effects of a medication.[2] If the FMEA determines that the proposed proprietary name could be a source of confusion that could cause medication errors under the proposed prescribing conditions, the proposed proprietary name is found unacceptable.

Additional Information

Although FDA strives to identify potentially confusing names prior to marketing, there are cases in which the potential for name confusion is not predicted prior to approval and a name is marketed that leads to errors. In these situations, changing a proprietary name while the product is marketed may be necessary to address medication errors resulting from the name confusion. Therefore, we continue to encourage you to report all medication errors to MedWatch so that FDA can be made aware of potential problems early on and the agency can provide effective interventions that will minimize further errors.

The documents accessed through the following links provide additional information on the proprietary name review process.

www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM072229.pdf

http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm075068.pdf

[1] Joint Commission Resources, Root Cause Analysis in Healthcare 201 (3rdEd, 2005).

[2] Institute of Medicine, *Preventing Medication Errors*.