Guidance for the Content of Premarket Notifications for Conventional and Antimicrobial Foley Catheters (Text Only)

This guidance was written prior to the February 27, 1997 implementation of FDA's Good Guidance Practices, GGP's. It does not create or confer rights for or on any person and does not operate to bind FDA or the public. An alternative approach may be used if such approach satisfies the requirements of the applicable statute, regulations, or both. This guidance will be updated in the next revision to include the standard elements of GGP's.

Conventional and antimicrobial Foley catheters are described in the FDA regulations under 21 CFR 876.5130(a), Urological Catheter and Accessories, as a "flexible tubular device that is inserted through the urethra and used to pass fluids to or from the urinary tract." The classification for these devices is class II as stated in 21 CFR 876.5130(b) and its product codes are: 78 EZL - catheter, retention type, balloon and 78 MJC - urological catheter (antimicrobial) and accessories.

A Foley catheter has also been described in the scope of the ASTM F 623-89 standard, as an indwelling balloon-retention catheter used by medical professionals to provide a means of bladder drainage through the urethra. The catheter is for single use, is intended for short-term (less than 30 days) use, and is retained in the bladder with a balloon inflated with a sterile liquid. Sterile water is generally recommended.

A catheter that is not within the scope of the ASTM F 623-89 standard may merit special attention from the manufacturer as well as FDA. Specifically excluded from the scope of the ASTM standard are catheters that have three lumens, balloons equal to or larger than 30 cm3, or shaft sizes smaller than 12 Fr or larger than 26 Fr. Also excluded are catheters for pediatric and nonurethral catheterizations such as nephrostomy, suprapubic cystostomy, ureterostomy, gastrostomy, enemas, etc. The properties of the catheter that are outside the scope of the standard may enable the catheter to be used for indications that would require additional data to establish safety and effectiveness, including clinical data. Antimicrobial and hydrophilic coated catheters are excluded from the scope of this standard and the required additional data for these catheters are cited later in this guidance.

The primary reference for the information required to be in a premarket notification (510(k)) for a medical device is set forth in 21 CFR 807.87. The purpose of this regulation is to provide adequate documented information to determine substantial equivalence to a device in commercial distribution. Substantial equivalence is to be established with respect to, but not limited to, intended use, design, materials, performance, safety, effectiveness, labeling, and other applicable characteristics.

FDA recommends that each premarket notification for a Foley catheter includes the following information in order to ensure that the submission is complete and will permit a determination of substantial equivalence:

I. Device Name. The device name, including both the trade or proprietary name and the classification name (Urological Catheter and Accessories) of the device as described in 21 CFR 807.87(a).

II. Establishment Registration Number. The establishment registration number, if applicable, of the owner or operator submitting the premarket notification as described in 21 CFR 807.87(b).

III. Class. The class (class II) in which the device has been placed under section 513 of the Federal Food, Drug, and Cosmetic Act (the act) and the appropriate panel (78 Gastroenterology/Urology) as described in 21 CFR 807.87(c).

IV. Special Controls. Action taken by the person required to register to comply with the requirements of the act under section 513 for Special Controls. Note that Special Controls are not currently required for conventional or antimicrobial Foley catheters under section 513 of the act.

V. 510(k) Summary or Statement. The Safe Medical Devices Act of 1990 (SMDA) requires all persons submitting a premarket notification submission to include either (1) a summary of safety and effectiveness information in the premarket notification submission upon which an equivalence determination could be based (510(k) summary) OR (2) a statement that safety and effectiveness information will be made available to interested persons upon request (510(k) statement). Safety and effectiveness information refers to information in the premarket notification submission, including adverse safety and effectiveness information, that is relevant to an assessment of substantial equivalence. The information could be descriptive information about the new and predicate device(s), or performance or clinical testing information.

VI. Labeling. Proposed labels, labeling, and advertisements sufficient to describe the conventional or antimicrobial Foley catheter, its intended use, and the directions for use should be provided with a specific intended use statement and any warnings, contraindications, or

limitations clearly displayed as described in 21 CFR 807.87(e). The label of the device packaging must bear the caution statement as outlined in 21 CFR 801.109(b)(1): "CAUTION: Federal law restricts this device to sale by or on the order of a physician."

A. A label includes any identification on the Foley catheter and on the package in which it is stored and shipped. The package label should include the device name, corporation name, address, and telephone number, as well as sterility status, expiration date, disposable/single use, quantity enclosed, size (French, balloon, and length), intended use, and, if applicable, type of coating(s), etc. Note that if an antimicrobial agent is included as an ingredient, the amount/concentration of the antimicrobial agent is required.

B. Device labeling for the Foley catheter should include all the information required for a prescription device as noted under 21 CFR 801.

1. The intended use statement should include specific indications for use, clinical setting, a defined target population, etc.

2. Directions for use should include: a) instructions on how to prepare the Foley catheter for patient use; b) how to insert and remove the Foley catheter; c) recommended maximum indwelling time; d) procedures to use if the balloon fails to deflate; and e) a statement of whether the catheter is intended as single use/disposable or reusable. If a catheter is to labeled as reusable for the same patient, provide adequate instructions about how to clean and sterilize the Foley catheter, as well as validation as to anticipated changes in device function secondary to reprocessing (e.g., change in antimicrobial status). Functional test procedures for the Foley catheter prior to use should also be provided, e.g., balloon inflation/deflation.

3. Contraindications, precautions, warnings, and adverse effects should be included within the labeling for the device.

4. When the device contains an antimicrobial, there should be a statement on the label indicating that the antimicrobial is an active agent (i.e., has a prophylactic intended use, and is not present as a preservative, i.e., primarily intended to retard degradation). It is recommended that the labeling also include a section which characterizes the antimicrobial and its activity. For example, include the following information:

a. amount/concentration of the antimicrobial;

b. information characterizing the chemistry of the antimicrobial used;

c. information characterizing the pharmacology and toxicology of the antimicrobial including metabolism and excretion information;

d. the spectrum of activity of the antimicrobial and how that spectrum relates to the type of organisms commonly associated with urological nosocomial infections;

e. the mechanism of action of the antimicrobial as it relates to the device, (e.g., microbial growth is inhibited by surface contact with the catheter, or the antimicrobial is eluted by contact with body fluids to provide a local antimicrobial effect);

f. a statement, if appropriate, to indicate the potential for hypersensitivity or allergic reaction of patients to the antimicrobial selected (e.g., a statement that history of hyper-sensitivity reaction to the antimicrobial agent is a contraindication for use of this catheter);

g. a summary of the clinical results on which the antimicrobial claims are based; and

h. for a reusable antimicrobial catheter, the number of safe and effective reuse cycles that have been validated.

C. Advertisements or promotional literature for the Foley catheter that will accompany the device should be provided. Literature or labeling may not imply approval by FDA in any manner. Guidance on labeling issues is described in ODE Bluebook Memo G91-1 "Device Labeling Guidance (3/8/91)." A copy of this guidance may be obtained from the Center for Devices and Radiological Health's (CDRH) Division of Small Manufacturers Assistance (DSMA) at (800) 638-2041 or (301) 443-6597.

VII. Summary of Equivalence. A Summary of Equivalence comparing similar devices legally in commercial distribution in the United States should be provided. This includes devices in commercial distribution prior to May 28, 1976, the enactment date of the Medical Devices Amendments, and any new class II devices introduced subsequently. A Summary of Equivalence includes similarities and differences between the device and the device to which it is compared. The conventional or antimicrobial Foley catheter should be compared to a legally marketed conventional or antimicrobial Foley catheter, respectively, including, but not necessarily limited to, the following: intended use, design (including sizes of catheter tips, shafts, and balloons), materials, performance, and, if applicable, types of coatings (antimicrobial, hydrophilic, etc.), amount/concentration of coating(s), and catheter coating process.

State whether the substantially equivalent device is a pre-amendments device or a device which has been through the 510(k) process, providing the 510(k) document control number, if known. The Summary of Equivalence information should be provided in a manner that is clear and comprehensible (e.g., tabular form).

VIII. Device Modification. For a device that has undergone a change or modification that could significantly affect the safety or effectiveness of the device, or for a device to be marketed for a new or different indication for use, the 510(k) should include appropriate supporting data to show that the manufacturer has considered the consequences and effects that the change or modification or new use might have on the safety and effectiveness of the device, as described in 21 CFR 807.87(g).

Significant modifications should be supported by a rationale for the modification with supporting documentation including clinical or other valid scientific studies which demonstrate that these differences do not affect safety or effectiveness, as described in 21 CFR 807.87(f).

The description of the Foley catheter and accessories should include any significant changes or modifications from the predicate device that could affect safety, effectiveness, or intended use. Provide any bench, animal, clinical, functional, in vitro, and/or any other testing data to support marketing claims. Certification should be provided regarding compliance with voluntary standards, if applicable.

Additional guidance concerning device modifications is available in the draft guidance titled, "Deciding When to Submit a 510(k) for Change to an Existing Device (4/8/94)." A copy may be obtained from DSMA.

IX. Device Description. The physical description of each Foley catheter and all accessories to be marketed should be provided in the form of a labeled diagram, photograph, schematic, etc., which includes all internal/external parts of the Foley catheter and accessories. The physical description should include the dimensional specifications (i.e., length, diameter, balloon size, etc.) of the Foley catheter and accessories. The physical description should also identify any parts which are disposable. The labeled diagram, photograph, schematic, etc., should address the name and function of all parts of the Foley catheter and accessories.

If the Foley catheter is sold in a set that includes accessories, these accessories should be identified. The accessories are considered part of the device and require the same types of information as stated above. Labeling should state whether the accessory is intended for single use/disposable or is reusable. If any of the accessories have been previously marketed for the same intended use, certification of the pre-amendments status or the 510(k) number should be provided, if known.

The precise formulation of the antimicrobial coating with acceptable tolerances should be provided. The calculations for derivation of the final concentration of the antimicrobial coating on the device and anticipated change in concentration over time of use and anticipated change in effectiveness should also be provided. The requirements for the coating and how the coating process meets those requirements (e.g., uniformity of coating, bonding, polymer/antimicrobial mixture, etc.) should be described. The final device specifications for the antimicrobial should be based upon the sterilized, packaged device.

X. Device Materials and Biocompatibility. An exact identification of all materials used to fabricate the Foley catheter and accessories should be provided. The exact formulation, including a statement regarding any material differences from the pre-amendments or substantially equivalent Foley catheter and accessories, should be provided.

If the antimicrobial agent that is used on the catheter is the subject of an approved new drug application (NDA), or over the counter (OTC) monograph, then provide a reference to those documents. This may limit the amount of information needed for the antimicrobial agent. Any differences between the approved drug product and the antimicrobial agent used in the catheter (e.g., intended use, dosage, route of administration, formulation, concentration) should be identified and their impact on the safety and effectiveness of the antimicrobial catheter discussed. Significant differences may require additional data. If the antimicrobial agent is not related to an NDA or OTC monograph whatsoever, or there is insufficient scientific and clinical literature on the antimicrobial agent for this specified use, then it is possible that information comparable to that required for an NDA may be required. Guidance for an NDA or OTC drug may be obtained from the Center for Drug Evaluation and Research's (CDER) Division of Anti-Infective Drug Products at (301) 443-4310.

If the materials are identical to the pre-amendments or substantially equivalent device and are identically processed and sterilized, then this should be explicitly stated. Biocompatibility testing data on any changes of material should be provided. Conventional and antimicrobial Foley catheters are considered to be short-term (less than 30 days) externally communicating devices, contacting intact natural channels (mucosa). At a minimum, biocompatibility data on the final sterilized device should be provided from the following tests: mucosal irritation, sensitization, cytotoxicity, acute systemic toxicity, and implantation. Guidance for this testing is provided in the document entitled "Tripartite Biocompatibility Guidance for Medical Devices." A copy may be obtained from DSMA.

An exact identification of all colorants (inks, dyes, markings, radiopaque materials, etc.) used to fabricate the Foley catheter and accessories should be provided and if the colorants are identical to the pre-amendments or substantially equivalent device then this should be explicitly stated. A statement regarding any colorant changes from the pre-amendments or substantially equivalent Foley catheter and accessories should be included. The sponsor should provide biocompatibility testing data on any colorant changes that have been implemented; state how the markings are processed (etched, bands, etc.) and whether the colorant contacts skin, mucosa, etc.

XI. Performance Data. The following data should be provided to demonstrate substantial equivalence of the Foley catheter to the predicate with respect to functional performance including ergonomics. These tests should be conducted in a manner as similar as possible to actual use of the Foley catheter in a medical procedure. A statistically valid number of Foley

catheters should be tested to establish the performance of each size. A sampling of Foley catheters representative of the product line (e.g., largest and smallest balloon, longest and shortest catheter shaft) should be tested. A discussion of the compliance or noncompliance of the Foley catheter with each of the requirements of the ASTM F 623-89 standard, including performance, design, and testing provisions should be provided. If the ASTM standard is not used, then provide the testing and the test results to determine:

a. the flow rate through the drainage lumen for each size catheter shaft;

b. the resistance of the balloon to rupture when inflated to the claimed balloon volume and held under conditions approximating the usage environment for a period of seven (7) days;

c. the resistance of the inflated balloon to being distorted and pulled through the bladder outlet;

d. the maintenance of balloon inflation to the labeled balloon volume over an extended time;

e. the manufacturing tolerances for the catheter tip, balloon, and shaft diameters;

f. the ability of an inflated catheter that has been submerged for 7 days to deflate reliably to within 4 Fr sizes of the labeled shaft size, including the time for such deflation; and

g. biocompatibility testing data for the materials of the device that may come in contact with human tissue.

Functional data for Foley catheters that contain a hydrophilic coating should demonstrate safety and effectiveness for the coatings intended use. The data should:

a. include coefficient of friction testing used to establish the effect of a lubricious or other type of coating on a Foley catheter where it is claimed that the coating is to reduce friction and promote ease of placement (testing should be conducted in accordance with accepted industry standards, e.g. ASTM D 1894, and explicitly stated as such, or a description and analysis of the test procedures used should be provided justifying their validity);

b. demonstrate whether the coatings cause any change in the make-up of the underlying catheter and balloon materials; and

c. include shelf life/expiration date testing to demonstrate that long periods of storage and adverse shipping conditions do not result in degradation of the coating or its properties.

Functional and performance data for the antimicrobial component used as a coating or integrated into the device material, should demonstrate that the antimicrobial is effective in reducing the incidence of relevant nosocomial infections and that it is safe. The data set should provide chemistry, pharmacology, microbiology, engineering, preclinical, and clinical information including:

a. data that demonstrates whether the active ingredient(s) cause any change in the make-up or specifications of the catheter and/or balloon;

b. shelf life/expiration date testing to demonstrate the effect of storage, adverse shipping conditions, and reprocessing (these effects should be reflected in labeling);

c. elution profile information to simulate and evaluate the release of the antimicrobial when exposed to body fluids;

d. in vitro test data characterizing the spectrum and degree of activity of the antimicrobial against all clinically important microorganisms (note: microorganisms should be clinical isolates, i.e., specimens derived from actual patient cultures). These microorganisms include: Candida sp., Citrobacter diversus, Enterobacter cloacae, Enterococcus, Escherichia coli, Klebsiellae pneumoniae, Proteus mirabilis, Pseudomonas aeruginosa, Staphylococcus saprophyticus, and Streptococcus fecalis. The test sample should include the finished form of the device (e.g., segments of the finished catheter). Note that if additional microorganisms are tested, justification, with supportive literature, should be provided for why they were tested;

e. detailed analysis of the potential for adverse effects such as the risk of superinfections;

f. information on the pharmacological and metabolic profile of the antimicrobial;

g. results from toxicity testing to assess the local and systemic effects of exposure to the antimicrobial;

h. assessment of whether the antimicrobial concentration selected to elicit the desired prophylactic effect against clinically appropriate microorganism is optimal; and

i. results from a randomized, controlled clinical study to (a) demonstrate a clinically and statistically significant decrease in the rate of infection and at least comparable safety as compared to a legally marketed conventional Foley catheter, and/or clinically and statistically similar safety and effectiveness compared to an antimicrobial coated Foley catheter; (b) quantitate the degree of change of the infection rate per duration of use of the catheter; and (c) include data to support any additional claims, including reprocessing.

Clinical information should also include: patient history of urinary tract infections (UTI) and all medications taken, urine cultures from patients and correlation of cultures taken from the urine sampled from collection bags, as well as the Foley tip for each patient in the control and experimental groups. Definitions and criteria for bacteriuria and UTI, as well as the urinary catheter care measures should be specified in the clinical protocol and be uniform across investigational sites.

Laboratory testing should state whether test cultures used were derived from patient or laboratory isolates.

Published literature on clinical studies with antimicrobial catheters may have some utility when designing a study. Note that for a reusable catheter, it is critical that the study evaluate safety and effectiveness for the maximum number of reuses indicated in labeling.

XII. Sterility Information. Complete information regarding Foley catheters and accessories that are sold sterile should be provided and should include sterilization method; sterilization cycle validation method; packaging materials and a description of the packaging to ensure sterility is maintained; sterility assurance level (SAL); and radiation dose or the maximum levels of residuals of ethylene oxide, ethylene chlorohydrin, and ethylene glycol which remain on the device, whichever is applicable. Guidance on sterility issues is provided in ODE Bluebook Memo K90-1 "510(k) Sterility Review Guidance (2/12/90)." A copy may be obtained from the CDRH's DSMA at (800) 638-2041 or (301) 443-6597. If the device is labeled as pyrogen free or non-pyrogenic, provide a description of the method used to make that determination (LAL or rabbit test).

If the Foley catheter and accessories are sold and labeled non-sterile or can be reprocessed, instructions on cleaning and sterilization should be provided. Accessories that are disposable should be labeled as single use.

XIII. Device Kits. If this device is to be marketed in a kit, identify all components and provide the certifications stated below:

I certify that the following components of my kit are either (1) legally marketed pre-amendments devices, (2) exempt from premarket notification (consistent with the exemption criteria described in the classification regulation(s) and the limitations of exemptions from Section 510(k) of the act (e.g., 862.9), or (3) have been found to be substantially equivalent through the premarket notification process for the use(s) for which the kit is to be intended (i.e., I am not claiming or causing a new use for the component(s)).

I further certify that these components are not purchased in "bulk", but are purchased in finished form, i.e., they are packaged, labeled, etc., consistent with their pre-amendments, exemption, or premarket notification criteria and status.

If you cannot make the above referenced certification statement (first paragraph) for each component of your kit, you must itemize the components without a pre-amendments, exemption, or premarket notification status. These kit components will undergo premarket notification review in parallel with the catheter.

If you cannot make the above referenced certification statement (second paragraph) for each component of your kit, you must itemize these components, state whether they are pre-amendments, exempt, or have been found substantially equivalent through the premarket notification process, and describe how you further process them (e.g., sterilize/resterilize, package/repackage, label/relabel, etc.).

If the device kit contains components which are subject to regulation as drugs, a substantially equivalent determination will not apply to the drug component(s) of the device. For information on applicable Agency requirements for marketing the drug component(s) in the kit, it is suggested that you contact the CDER's Division of Drug Labeling Compliance at (301) 295-8063.

For more information contact:

Urology and Lithotripsy Devices Branch
Division of Reproductive, Abdominal, Ear, Nose and
Throat, and Radiological Devices
Office of Device Evaluation
Center for Devices and Radiological Health
(301) 594-2194

More in Guidance Documents (Medical Devices and Radiation-Emitting Products) (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/default.htm)

Cross-Center Final Guidance (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm081752.htm)

Office of Compliance Final Guidance (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070269.htm)

Office of the Center Director Final Guidance (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm110228.htm)

Office of Communication and Education Final Guidance (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070271.htm)

Office of Device Evaluation Final Guidance 2010 - 2016 (/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm198577.htm)

Office of Device Evaluation Final Guidance 1998 - 2009
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070272.htm)

Office of Device Evaluation Final Guidance 1976 - 1997
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm080283.htm)

Office of In Vitro Diagnostics and Radiological Health Final Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070274.htm)

Office of Surveillance and Biometrics Final Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070275.htm)

Office of Science and Engineering Laboratories Final Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070277.htm)

Draft Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm407274.htm)

Radiation-Emitting Products Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm283507.htm)

Withdrawn Guidance
(/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm425025.htm)