



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 882

[Docket No. FDA-2016-N-4165]

Medical Devices; Neurological Devices; Classification of the Neurovascular Mechanical Thrombectomy Device for Acute Ischemic Stroke Treatment

AGENCY: Food and Drug Administration, HHS.

ACTION: Final order.

SUMMARY: The Food and Drug Administration (FDA) is classifying the neurovascular mechanical thrombectomy device for acute ischemic stroke treatment into class II (special controls). The special controls that will apply to the device are identified in this order and will be part of the codified language for the neurovascular mechanical thrombectomy device for acute ischemic stroke treatment's classification. The Agency is classifying the device into class II (special controls) in order to provide a reasonable assurance of safety and effectiveness of the device.

DATES: This order is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The classification was applicable on September 2, 2016.

FOR FURTHER INFORMATION CONTACT: Leigh Anderson, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, rm. 2656, Silver Spring, MD, 20993-0002, 301-796-5613, [leigh.anderson@fda.hhs.gov](mailto:leigh.anderson@fda.hhs.gov).

## SUPPLEMENTARY INFORMATION:

## I. Background

In accordance with section 513(f)(1) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 360c(f)(1)), devices that were not in commercial distribution before May 28, 1976 (the date of enactment of the Medical Device Amendments of 1976), generally referred to as postamendments devices, are classified automatically by statute into class III without any FDA rulemaking process. These devices remain in class III and require premarket approval unless and until the device is classified or reclassified into class I or II, or FDA issues an order finding the device to be substantially equivalent, in accordance with section 513(i) of the FD&C Act, to a predicate device that does not require premarket approval. The Agency determines whether new devices are substantially equivalent to predicate devices by means of premarket notification procedures in section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and part 807 (21 CFR part 807) of the regulations.

Section 513(f)(2) of the FD&C Act, as amended by section 607 of the Food and Drug Administration Safety and Innovation Act (Pub. L. 112-144), provides two procedures by which a person may request FDA to classify a device under the criteria set forth in section 513(a)(1). Under the first procedure, the person submits a premarket notification under section 510(k) of the FD&C Act for a device that has not previously been classified and, within 30 days of receiving an order classifying the device into class III under section 513(f)(1) of the FD&C Act, the person requests a classification under section 513(f)(2). Under the second procedure, rather than first submitting a premarket notification under section 510(k) of the FD&C Act and then a request for classification under the first procedure, the person determines that there is no legally marketed device upon which to base a determination of substantial equivalence and requests a

classification under section 513(f)(2) of the FD&C Act. If the person submits a request to classify the device under this second procedure, FDA may decline to undertake the classification request if FDA identifies a legally marketed device that could provide a reasonable basis for review of substantial equivalence with the device or if FDA determines that the device submitted is not of “low-moderate risk” or that general controls would be inadequate to control the risks and special controls to mitigate the risks cannot be developed.

In response to a request to classify a device under either procedure provided by section 513(f)(2) of the FD&C Act, FDA shall classify the device by written order within 120 days. This classification will be the initial classification of the device.

On October 26, 2015, Concentric Medical, Inc., submitted a request for classification of the Trevo ProVue and XP ProVue Retrievers (Trevo Retrievers) under section 513(f)(2) of the FD&C Act.

In accordance with section 513(f)(2) of the FD&C Act, FDA reviewed the request in order to classify the device under the criteria for classification set forth in section 513(a)(1). FDA classifies devices into class II if general controls by themselves are insufficient to provide reasonable assurance of safety and effectiveness, but there is sufficient information to establish special controls to provide reasonable assurance of the safety and effectiveness of the device for its intended use. After review of the information submitted in the request, FDA determined that the device can be classified into class II with the establishment of special controls. FDA believes these special controls, in addition to general controls, will provide reasonable assurance of the safety and effectiveness of the device.

Therefore, on September 2, 2016, FDA issued an order to the requestor classifying the device into class II. FDA is codifying the classification of the device by adding 21 CFR 882.5600.

Following the effective date of this final classification order, any firm submitting a premarket notification (510(k)) for a neurovascular mechanical thrombectomy device for acute ischemic stroke treatment will need to comply with the special controls named in this final order.

The device is assigned the generic name neurovascular mechanical thrombectomy device for acute ischemic stroke treatment, and it is identified as a prescription device used in the treatment of acute ischemic stroke to improve clinical outcomes. The device is delivered into the neurovasculature with an endovascular approach, mechanically removes thrombus from the body, and restores blood flow in the neurovasculature.

FDA has identified the following risks to health associated specifically with this type of device, as well as the measures required to mitigate these risks in table 1.

Table 1.--Neurovascular Mechanical Thrombectomy Device for Acute Ischemic Stroke Treatment Risks and Mitigation Measures

Identified Risk	Mitigation Measure
Adverse Tissue Reaction	Biocompatibility Evaluation
Infection	Sterility Testing Shelf-Life Testing Labeling
Tissue or Vessel Damage: <ul style="list-style-type: none"> <li>• Dissection</li> <li>• Perforation</li> <li>• Hemorrhage</li> </ul>	Non-clinical Performance Testing Clinical Performance Testing Labeling
Stroke Progression	Non-clinical Performance Testing Clinical Performance Testing Labeling
Emboli	Non-clinical Performance Testing Clinical Performance Testing Labeling

FDA believes that the special controls, in combination with the general controls, address these risks to health and provide reasonable assurance of the safety and effectiveness.

Neurovascular mechanical thrombectomy device for acute ischemic stroke treatment devices are not safe for use except under the supervision of a practitioner licensed by law to direct the use of the device. As such, the device is a prescription device and must satisfy prescription labeling requirements (see 21 CFR 801.109 Prescription devices).

Section 510(m) of the FD&C Act provides that FDA may exempt a class II device from the premarket notification requirements under section 510(k) if FDA determines that premarket notification is not necessary to provide reasonable assurance of the safety and effectiveness of the device. For this type of device, FDA has determined that premarket notification is necessary to provide reasonable assurance of the safety and effectiveness of the device. Therefore, this device type is not exempt from premarket notification requirements. Persons who intend to market this type of device must submit to FDA a premarket notification, prior to marketing the device, which contains information about the neurovascular mechanical thrombectomy device for acute ischemic stroke treatment they intend to market.

## II. Analysis of Environmental Impact

The Agency has determined under 21 CFR 25.34(b) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

## III. Paperwork Reduction Act of 1995

This final order establishes special controls that refer to previously approved collections of information found in other FDA regulations. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520). The collections of information in part 807, subpart E, regarding premarket notification submissions, have been approved under OMB control number 0910-0120,

and the collections of information in 21 CFR part 801, regarding labeling, have been approved under OMB control number 0910-0485.

#### List of Subjects in 21 CFR Part 882

Medical devices, Neurological devices.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, 21 CFR part 882 is amended as follows:

#### PART 882--NEUROLOGICAL DEVICES

1. The authority citation for part 882 continues to read as follows:

Authority: 21 U.S.C. 351, 360, 360c, 360e, 360j, 360l, 371.

2. Add § 882.5600 to subpart F to read as follows:

#### § 882.5600 Neurovascular mechanical thrombectomy device for acute ischemic stroke treatment.

(a) Identification. A neurovascular mechanical thrombectomy device for acute ischemic stroke treatment is a prescription device used in the treatment of acute ischemic stroke to improve clinical outcomes. The device is delivered into the neurovasculature with an endovascular approach, mechanically removes thrombus from the body, and restores blood flow in the neurovasculature.

(b) Classification. Class II (special controls). The special controls for this device are:

(1) The patient contacting components of the device must be demonstrated to be biocompatible.

(2) Non-clinical performance testing must demonstrate that the device performs as intended under anticipated conditions of use, including:

(i) Mechanical testing to demonstrate the device can withstand anticipated tensile, torsional, and compressive forces.

- (ii) Mechanical testing to evaluate the radial forces exerted by the device.
  - (iii) Non-clinical testing to verify the dimensions of the device.
  - (iv) Non-clinical testing must demonstrate the device can be delivered to the target location in the neurovasculature and retrieve simulated thrombus under simulated use conditions.
  - (v) Non-clinical testing must demonstrate the device is radiopaque and can be visualized.
  - (vi) Non-clinical testing must evaluate the coating integrity and particulates under simulated use conditions.
  - (vii) Animal testing must evaluate the safety of the device, including damage to the vessels or tissue under anticipated use conditions.
- (3) Performance data must support the sterility and pyrogenicity of the patient contacting components of the device.
- (4) Performance data must support the shelf-life of the device by demonstrating continued sterility, package integrity, and device functionality over the specified shelf-life.
- (5) Clinical performance testing of the device must demonstrate the device performs as intended for use in the treatment of acute ischemic stroke and must capture any adverse events associated with the device and procedure.
- (6) The labeling must include:
- (i) Information on the specific patient population for which the device is intended for use in the treatment of acute ischemic stroke, including but not limited to, specifying time from symptom onset, vessels or location of the neurovasculature that can be accessed for treatment, and limitations on core infarct size.
  - (ii) Detailed instructions on proper device preparation and use for thrombus retrieval from the neurovasculature.

(iii) A summary of the clinical testing results, including a detailed summary of the device- and procedure-related complications and adverse events.

(iv) A shelf life.

Dated: December 19, 2016.

Leslie Kux,

Associate Commissioner for Policy.

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