



October 3, 2014

Ms. Michele Walz  
Regulatory Affairs Project Manager  
Abbott Vascular, Inc.  
3200 Lakeside Drive  
Santa Clara, CA 95054

Re: P070015/S122  
XIENCE V<sup>®</sup> and XIENCE nano<sup>®</sup> Everolimus Eluting Coronary Stent System

P110019/S066  
XIENCE PRIME<sup>™</sup> and XIENCE PRIME LL Everolimus Eluting Coronary Stent System, XIENCE Xpedition<sup>®</sup>, XIENCE Xpedition SV and XIENCE Xpedition LL Everolimus Eluting Coronary Stent System and XIENCE Alpine<sup>™</sup> Everolimus Eluting Coronary Stent System

Filed: March 21, 2014

Amended: April 9, July 7, July 10, August 25, and September 5, 2014

Procode: NIQ

Dear Ms. Walz:

The Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration (FDA) has completed its review of your premarket approval application (PMA) supplements for the expansion of the indications for use of the XIENCE V and XIENCE nano Everolimus Eluting Coronary Stent System XIENCE PRIME and XIENCE PRIME LL Everolimus Eluting Coronary Stent System, XIENCE Xpedition, XIENCE Xpedition SV and XIENCE Xpedition LL Everolimus Eluting Coronary Stent System, and XIENCE Alpine Everolimus Eluting Coronary Stent System to include *de novo* total coronary occlusions.. These devices are indicated for the following:

XIENCE V and XIENCE nano Everolimus Eluting Coronary Stent System

The XIENCE V and XIENCE nano Everolimus Eluting Coronary Stent System is indicated for improving coronary luminal diameter in patients with symptomatic heart disease due to *de novo* native coronary artery lesions (length  $\leq$  28mm) with reference vessel diameters of 2.25mm to 4.25mm. Additionally, the XIENCE V stent system is indicated for treating *de novo* chronic total coronary occlusions.

XIENCE PRIME and XIENCE PRIME LL Everolimus Eluting Coronary Stent System

The XIENCE PRIME and XIENCE PRIME LL Everolimus Eluting Coronary Stent System is indicated for improving coronary artery luminal diameter in patients with

symptomatic heart disease due to *de novo* native coronary artery lesions (length  $\leq$  32mm) with reference vessel diameters of  $\geq$ 2.25mm to  $\leq$ 4.25mm. Additionally, the XIENCE PRIME stent system is indicated for treating *de novo* chronic total coronary occlusions.

XIENCE Xpedition, XIENCE Xpedition SV and XIENCE Xpedition LL Everolimus Eluting Coronary Stent System

The XIENCE Xpedition, XIENCE Xpedition SV and XIENCE Xpedition LL Everolimus Eluting Coronary Stent System is indicated for improving coronary artery luminal diameter in patients with symptomatic heart disease due to *de novo* native coronary artery lesions (length  $\leq$  32mm) with reference vessel diameters of  $\geq$ 2.25mm to  $\leq$ 4.25mm. Additionally, the XIENCE Xpedition stent system is indicated for treating *de novo* chronic total coronary occlusions.

XIENCE Alpine Everolimus Eluting Coronary Stent System

The XIENCE Alpine Everolimus Eluting Coronary Stent System is indicated for improving coronary artery luminal diameter in patients with symptomatic heart disease due to *de novo* native coronary artery lesions (length  $\leq$  32mm) with reference vessel diameters of  $\geq$ 2.25mm to  $\leq$ 4.25mm. Additionally, the XIENCE Alpine stent system is indicated for treating *de novo* chronic total coronary occlusions.

We are pleased to inform you that the PMA supplements are approved. You may begin commercial distribution of the device as modified in accordance with the conditions of approval described below.

The sale and distribution of this device are restricted to prescription use in accordance with 21 CFR 801.109 and under section 515(d)(1)(B)(ii) of the Federal Food, Drug, and Cosmetic Act (the act). The device is further restricted under section 515(d)(1)(B)(ii) of the act insofar as the labeling must specify the specific training or experience practitioners need in order to use the device.

Continued approval of this PMA is contingent upon the submission of periodic reports, required under 21 CFR 814.84, at intervals of one year (unless otherwise specified) from the date of approval of the original PMA. Two copies of this report, identified as "Annual Report" and bearing the applicable PMA reference number, should be submitted to the address below. The Annual Report should indicate the beginning and ending date of the period covered by the report and should include the information required by 21 CFR 814.84.

In addition to the above, and in order to provide continued reasonable assurance of the safety and effectiveness of the device, the Annual Report must include, separately for each model number (if applicable), the number of devices sold and distributed during the reporting period, including those distributed to distributors. The distribution data will serve as a denominator and provide necessary context for FDA to ascertain the frequency and prevalence of adverse events, as FDA evaluates the continued safety and effectiveness of the device.

In addition to the Annual Report requirements, you must provide the following data in a separate post-approval study (PAS) report. As a condition of approval, you have agreed to conduct the following post-approval study as described below:

*The Extended Follow-up of the EXPERT CTO Study:* This study will be conducted as per IDE G110103 study protocol dated May 7, 2012, Version 5.0 included in P070015/S122 and P110019/S066. This study will continue the follow-up of 205 patients available at one year from the premarket cohort (EXPERT CTO trial). This is a prospective, multi-center study and all available patients will be followed out to 5 years post-procedure.

The primary study objective is to assess the safety and effectiveness of the XIENCE V Everolimus Eluting Coronary Stent System and XIENCE nano Everolimus Eluting Coronary Stent System, and the XIENCE PRIME LL Everolimus Eluting Coronary Stent System for the treatment of chronic total coronary occlusions through 5 years post-procedure.

The endpoints to be assessed at 2, 3, 4, and 5 years post procedure are: (1) major adverse cardiac events (MACE), defined as a composite of death, all myocardial infarction (MI), or clinically-driven target lesion revascularization (TLR) and individual MACE components; (2) target lesion failure (TLF), defined as a composite of cardiac death, target vessel-related MI, and clinically-driven TLR and individual TLR components; (3) target vessel revascularization (TVR) and clinically-driven TVR; (4) target vessel failure (TVF), defined as a composite of cardiac death, target vessel-related MI, and clinically-driven TVR and individual TVF components; (5) stent fracture at target lesion assessed by fluoroscopy in patients undergoing clinically-driven angiographic follow-up; and (6) stent thrombosis defined by the Academic Research Consortium (ARC).

The rates of MACE (both ARC and protocol definitions of MI) and its components as well as stent thrombosis and stent fracture from CTO patients in the XIENCE V USA Registry will be descriptively compared with the rates of the EXPERT CTO PAS patients as agreed in submissions P070015/S122/A004 and P110019/S066/A004. The XIENCE V USA CTO patients only have data available through 4 years; thus, the data for the EXPERT CTO patients through 5 years will be provided in the final study report, without a comparator.

Please be advised that the results from these studies should be included in the labeling as these data become available. Any updated labeling must be submitted to FDA in the form of a PMA Supplement.

Be advised that the failure to conduct any such study in compliance with the good clinical laboratory practices in 21 CFR part 58 (if a non-clinical study subject to part 58) or the institutional review board regulations in 21 CFR part 56 and the informed consent regulations in 21 CFR part 50 (if a clinical study involving human subjects) may be grounds for FDA withdrawal of approval of the PMA.

FDA would like to remind you that you are required to submit PAS Progress Reports annually and to submit the final PAS Report within three months after study completion. The PAS

Progress Reports should be submitted separately from the Annual Reports. Two copies, identified as "PMA Post-Approval Study Report" and bearing the applicable PMA reference number, should be submitted to the address below. For more information on post-approval studies, see the FDA guidance document entitled, "Procedures for Handling Post-Approval Studies Imposed by PMA Order"

<http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm070974.htm>

Before making any change affecting the safety or effectiveness of the device, you must submit a PMA supplement or an alternate submission (30-day notice) in accordance with 21 CFR 814.39. All PMA supplements and alternate submissions (30-day notice) must comply with the applicable requirements in 21 CFR 814.39. For more information, please refer to the FDA guidance document entitled, "Modifications to Devices Subject to Premarket Approval (PMA) - The PMA Supplement Decision-Making Process"

([www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm089274.htm](http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm089274.htm)).

You are reminded that many FDA requirements govern the manufacture, distribution, and marketing of devices. For example, in accordance with the Medical Device Reporting (MDR) regulation, 21 CFR 803.50 and 21 CFR 803.52, you are required to report adverse events for this device. Manufacturers of medical devices, including in vitro diagnostic devices, are required to report to FDA no later than 30 calendar days after the day they receive or otherwise becomes aware of information, from any source, that reasonably suggests that one of their marketed devices:

1. May have caused or contributed to a death or serious injury; or
2. Has malfunctioned and such device or similar device marketed by the manufacturer would be likely to cause or contribute to a death or serious injury if the malfunction were to recur.

Additional information on MDR, including how, when, and where to report, is available at [www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm](http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm).

In accordance with the recall requirements specified in 21 CFR 806.10, you are required to submit a written report to FDA of any correction or removal of this device initiated by you to: (1) reduce a risk to health posed by the device; or (2) remedy a violation of the act caused by the device which may present a risk to health, with certain exceptions specified in 21 CFR 806.10(a)(2). Additional information on recalls is available at [www.fda.gov/Safety/Recalls/IndustryGuidance/default.htm](http://www.fda.gov/Safety/Recalls/IndustryGuidance/default.htm).

CDRH does not evaluate information related to contract liability warranties. We remind you; however, that device labeling must be truthful and not misleading. CDRH will notify the public of its decision to approve your PMA by making available, among other information, a summary of the safety and effectiveness data upon which the approval is based. The information can be

found on the FDA CDRH Internet Homepage located at [www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/PMAApprovals/default.htm](http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/PMAApprovals/default.htm). Written requests for this information can also be made to the Food and Drug Administration, Dockets Management Branch, (HFA-305), 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. The written request should include the PMA number or docket number. Within 30 days from the date that this information is placed on the Internet, any interested person may seek review of this decision by submitting a petition for review under section 515(g) of the act and requesting either a hearing or review by an independent advisory committee. FDA may, for good cause, extend this 30-day filing period.

Failure to comply with any post-approval requirement constitutes a ground for withdrawal of approval of a PMA. The introduction or delivery for introduction into interstate commerce of a device that is not in compliance with its conditions of approval is a violation of law.

You are reminded that, as soon as possible and before commercial distribution of your device, you must submit an amendment to this PMA submission with copies of all approved labeling in final printed form. Final printed labeling that is identical to the labeling approved in draft form will not routinely be reviewed by FDA staff when accompanied by a cover letter stating that the final printed labeling is identical to the labeling approved in draft form. If the final printed labeling is not identical, any changes from the final draft labeling should be highlighted and explained in the amendment.

All required documents should be submitted in six copies, unless otherwise specified, to the address below and should reference the above PMA number to facilitate processing.

U.S. Food and Drug Administration  
Center for Devices and Radiological Health  
PMA Document Control Center – WO66-G609  
10903 New Hampshire Avenue  
Silver Spring, MD 20993-0002

If you have any questions concerning this approval order, please contact Katharine Chowdhury at (301) 796-5560 or at [katharine.chowdhury@fda.hhs.gov](mailto:katharine.chowdhury@fda.hhs.gov).

Sincerely yours,

**Melissa A. Torres -S**

For Bram D. Zuckerman, M.D.  
Division Director  
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