***Physician Note****: This sample letter template provides suggestions to assist in writing a Letter of Medical Necessity or prior authorization request for the Acculink Carotid Artery Stent System or the Xact Carotid Stent for patients with carotid artery disease at high surgical risk. It is always the provider’s responsibility to determine the medical necessity of a service for a particular patient, and requirements vary by payer. This sample letter is not meant to be used as a form letter. Physicians should customize the letter based on the patient’s actual medical history, diagnosis and consistent with any specific payer requirements. It is very important to ensure all information provided to payers is accurate and medical necessity of the procedure is reflected in the patient’s medical record.*

**Sample Letter of Medical Necessity**

**Carotid Artery Stenting - High Surgical Risk Patients**

Date

Health Plan

Address

Address

Attention: Medical Director

Member Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Member ID# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DX(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Physician \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Facility \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Planned Date of Service \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I am writing on behalf of my patient, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, to request prior authorization for treatment of carotid artery disease with carotid angioplasty and stenting with embolic protection (CPT code 37215).

The Rapid Exchange (RX) Acculink Carotid Stent was approved in August 2004 and Xact Carotid Stent was approved in September 2005 for patients with carotid artery stenosis at high surgical risk. The FDA approval letter and Summaries of Safety and Efficacy Data are attached and more detailed information on the labeled indication is provided below.

|  |  |
| --- | --- |
| **Symptomatic Status** | **FDA Approved Indications** |
| **High Surgical Risk****Acculink - Approval Aug. 2004****Xact - Approval Sep. 2005** | **Standard Surgical Risk****Acculink - Approval May 2011** |
| Symptomatic | ≥50% stenosis by ultrasound or angiogram | ≥70% stenosis by ultrasound or≥50% stenosis by angiogram |
| Asymptomatic | ≥80% stenosis by ultrasound or angiogram | ≥70% stenosis by ultrasound or≥60% stenosis by angiogram |

**Clinical History**

[My patient is an XX year old [insert gender] who has [insert detailed diagnostic description and ICD-10 diagnosis codes]. Insert other relevant patient clinical information here, including diagnostic work-up studies and results, anatomical location of the stenosis, percent stenosis, and if symptomatic.]

**Treatment Rationale**

Carotid artery disease accounts for 20% of ischemic strokes.[[1]](#footnote-1),[[2]](#footnote-2),[[3]](#footnote-3) Revascularization for carotid artery disease has been shown to prevent stroke and reduce death rate in multiple randomized trials3,[[4]](#footnote-4),[[5]](#footnote-5) Carotid artery stenting is less invasive than surgery. The 2011 National practice guidelines endorsed by all relevant medical specialties recommend stenting as a treatment option.3 Revascularization for carotid artery disease has been shown to prevent stroke and reduce death rate in multiple randomized trials3,[[6]](#footnote-6),[[7]](#footnote-7) Carotid artery stenting is less invasive than surgery. The 2011 national practice guidelines endorsed by all relevant medical specialties recommend stenting as an appropriate treatment option.3

CREST is a major NIH-sponsored randomized clinical trial comparing the safety and effectiveness of carotid artery stenting and carotid endarterectomy in 2,502 symptomatic and asymptomatic standard surgical risk patients. The 10-year results of the CREST NIH analysis were published in the *New England Journal of Medicine*. The long-term results demonstrated thatcarotid artery stenting with the Acculink Carotid Stent System and Accunet Embolic Protection System not only was safe and effective in treating carotid artery disease for standard surgical risk patients with carotid artery disease but also provided long-term durable outcomes to prevent stoke during the postprocedural period.[[8]](#footnote-8)

ACT-I is an Abbott sponsored randomized controlled clinical trial comparing the safety and effectiveness of carotid artery stenting and carotid endarterectomy in 1,453 asymptomatic, standard surgical risk patients. The 5-year results of the ACT-I analysis were published in the *New England Journal of Medicine. The long-term results* demonstrated that carotid artery stenting with the Xact Carotid Stent System and Emboshield Embolic Protection System not only was safe and effective when treating carotid artery disease for standard surgical risk patients with carotid artery disease but also provided long-term durable outcomes to prevent stroke during the postprocedural period.18

Data from multiple pivotal high surgical risk clinical trials and post-market studies (ARCHeR, SECuRITY, CAPTURE, CAPTURE 2, EXACT, and PROTECT[[9]](#footnote-9),[[10]](#footnote-10),[[11]](#footnote-11),[[12]](#footnote-12),[[13]](#footnote-13),[[14]](#footnote-14),[[15]](#footnote-15),[[16]](#footnote-16),[[17]](#footnote-17)) demonstrate the safety and effectiveness of carotid stenting. In the time since the FDA approvals, event rates (death, stroke, and MI) have consistently decreased and are consistent with AHA guidelines set for symptomatic and asymptomatic standard risk patients. Decrease in periprocedural event rates is due to advancement in technology, increasing operator experience, and better patient selection. Patients indicated for carotid artery stenting who are at high risk for surgery have no other interventional options.

Written authorization should be faxed to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If you have any questions please do not hesitate to contact me.

Sincerely,

Physician Name, Title, and Institution

**Disclaimer**
The information provided in this document was obtained from third-party sources and is subject to change without notice as a result of changes in reimbursement laws, regulations, rules, policies, and payment amounts. All content is informational only, general in nature, and does not cover all situations or all payers’ rules and policies. It is the responsibility of the hospital or physician to determine appropriate coding for a particular patient and/or procedure. Any claim should be coded appropriately and supported with adequate documentation in the medical record. A determination of medical necessity is a prerequisite that Abbott Vascular assumes will have been made prior to assigning codes or requesting payments. Any codes provided are examples of codes that specify some procedures or which are otherwise supported by prevailing coding practices. They are not necessarily correct coding for any specific procedure using Abbott Vascular’s products.

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The FDA-approved/cleared labeling for all products may not be consistent with all uses described herein. This document is in no way intended to promote the off-label use of medical devices. The content is not intended to instruct hospitals and/or physicians on how to use medical devices or bill for healthcare procedures.

**Abbott Product Information**
Any questions or comments about Abbott products or codes and Medicare policies that may be applicable to Abbott products should be directed to the Abbott Vascular Reimbursement Hotline (1-800-354-9997). Product information including FDA approved or cleared indications for Abbott Vascular products is provided in accordance with Abbott policies and FDA.



**RX Acculink®**

**Carotid Stent System**

**INDICATIONS**

The RX Acculink Carotid Stent System, used in conjunction with the Abbott Vascular embolic protection system specified below, is indicated for the treatment of patients at high and standard risk for adverse events from carotid endarterectomy who require carotid revascularization and meet the criteria outlined below:

**CONTRAINDICATIONS**

|  |  |  |
| --- | --- | --- |
|  | **High Risk**  | **Standard Risk**  |
| Embolic Protection System  | Abbott Vascular’s Accunet or Emboshield Family |
| With neurological symptoms  | ≥ 50% stenosis of the common or internal carotid artery by ultrasound or angiogram  | ≥ 70% stenosis of the common or internal carotid artery by ultrasound or ≥ 50% stenosis of the common or internal carotid artery by angiogram  |
| Without neurological symptoms  | ≥ 80% stenosis of the common or internal carotid artery by ultrasound or angiogram  | ≥ 70% stenosis of the common or internal carotid artery by ultrasound or ≥ 60% stenosis of the common or internal carotid artery by angiogram  |
| Reference vessel diameter  | Must be within 4.0 mm – 9.0 mm at the target lesion  |

The RX Acculink Carotid Stent System is contraindicated for use in:

• Patients in whom anti-coagulant and / or anti-platelet therapy is contraindicated.

• Patients with severe vascular tortuosity or anatomy that would preclude the safe introduction of a guide catheter, sheath, embolic protection system, or stent system.

• Patients with known hypersensitivity to nickel-titanium.

• Patients with uncorrected bleeding disorders.

• Lesions in the ostium of the common carotid artery.

**WARNINGS**

Only physicians who have received appropriate training and are familiar with the principles, clinical applications, complications, side effects and hazards commonly associated with carotid stent placement should use this device.

**General**

Refer to the Instructions for Use supplied with any interventional devices to be used in conjunction with the RX Acculink Carotid Stent System for their intended uses, contraindications, and potential complications.

The safety and efficacy of the RX Acculink Carotid Stent System have not been demonstrated with embolic protection systems other than Abbott Vascular’s Accunet or Emboshield family of Embolic Protection Systems (EPS). Refer to the Instructions for Use document for the Embolic Protection System that will be used for specific device instructions.

Clinical study results suggest lower event rates when the RX Acculink Carotid Stent System is used in conjunction with an embolic protection device.

The long-term performance (> 3 years) of the Acculink Carotid Stent has not been established.

As with any type of vascular implant, infection secondary to contamination of the stent may lead to thrombosis, pseudoaneurysm, or rupture.

Stenting across a major bifurcation may hinder or prevent future diagnostic or therapeutic procedures.

In patients requiring the use of antacids and / or H2-antagonists before or immediately after stent placement, oral absorption of antiplatelet agents (e.g. aspirin) may be adversely affected.

The appropriate antiplatelet and anticoagulation therapy should be administered pre- and postprocedure as suggested in these instructions. Special consideration should be given to those patients with recently active gastritis or peptic ulcer disease.

When multiple stents are required, stent materials should be of similar composition.

 **Patient Selection**

The safety and effectiveness of the RX Acculink Carotid Stent System have NOT yet been established in patients with the characteristics noted below.

**Patient Characteristics:**

• Patients experiencing acute ischemic neurologic stroke or who experience a stroke within 7 days prior to the procedure • Patients with an intracranial mass lesion (i.e., abscess, tumor, or infection) or aneurysm > 5 mm • Patients with arteriovenous malformations of the territory of the target carotid artery • Patients with coagulopathies • Patients with poor renal function who, in the physician’s opinion, may be at high risk for a reaction to contrast medium • Patients with perforated vessels evidenced by extravasation of contrast media • Patients with aneurysmal dilation immediately proximal or distal to the lesion • Pregnant patients or patients under the age of 18.

**Lesion Characteristics:**

• Patients with evidence of intraluminal thrombus thought to increase the risk of plaque fragmentation and distal embolization

• Patients whose lesion(s) may require more than two stents • Patients with total occlusion of the target vessel • Patients with highly calcified lesions resistant to PTA.

Access Characteristics:

• Patients with known peripheral vascular, supra-aortic or internal carotid artery tortuosity that would preclude the use of catheter-based techniques • Patients in whom femoral access is not possible • Risk of distal embolization may be higher if the RX Acculink Carotid System cannot be used in conjunction with an embolic protection system during the carotid stenting procedure.

The safety and effectiveness of concurrent treatment of lesions in patients with bilateral carotid artery disease have not been established.

 **DEVICE USE**

This device is intended for single-use only. Do not reuse. Do not resterilize, as this can compromise device performance and increase the risk of cross contamination due to inappropriate reprocessing.

Do not use the product after the "Use By" date specified on the package.

Do not use the product if the temperature indicator on inner pouch is black.

Maintain the patient’s Activated Clotting Time (ACT) at > 250 seconds throughout RX Acculink Carotid Stent System usage to prevent thrombus formation on the device.

Maintain continuous flush while removing and reinserting devices on the guide wire. Perform all exchanges slowly to prevent air embolism or trauma to the artery.

Caution should be used if pre-dilating the lesion without embolic protection as this may increase the risk of an adverse outcome.

Implanting a stent may lead to dissection of the vessel distal and / or proximal to the stent and may cause acute closure of the vessel, requiring additional intervention (carotid endarterectomy, further dilatation, or placement of additional stents).

The stent may cause a thrombus, distal embolization or may migrate from the site of implant down the arterial lumen. Appropriate sizing of the stent to the vessel is required to reduce the possibility of stent migration. In the event of thrombosis of the expanded stent, thrombolysis and PTA should be attempted.

In the event of complications such as infection, pseudoaneurysm or fistulization, surgical removal of the stent may be required.

Overstretching of the artery may result in rupture and life-threatening bleeding.

If a filter-based embolic protection system (EPS) is used, allow for and maintain adequate distance between the RX Acculink Carotid Stent System and the EPS to avoid potential filter engagement with the RX Acculink Carotid Stent System tip and / or filter entanglement with the deployed stent. If filter engagement and / or entanglement or filter detachment occurs, surgical conversion or additional catheter based intervention may be required.

Ensure optimal positioning of the stent prior to deployment. Once deployment is initiated, the stent cannot be repositioned or recaptured. Stent retrieval methods (use of additional wires, snares and / or forceps) may result in additional trauma to the carotid vasculature and / or the vascular access site. Complications may include death, stroke, bleeding, hematoma or pseudoaneurysm.

**PRECAUTIONS**

**Stent Handling – Precautions**

Carefully inspect the RX Acculink Carotid Stent System to verify that the device has not been damaged in shipment. Do not use damaged equipment.

The delivery system has an internal hypotube. Take care to avoid unnecessary handling, which may kink or damage the delivery system. Do not use if device is kinked.

Do not expose the delivery system to organic solvents (e.g. alcohol) as structural integrity and / or function of the device may be impaired.

Do not remove the stent from its delivery system as removal may damage the stent. The stent on the delivery system is intended to perform as a system. If removed, the stent cannot be put back on the delivery system.

The delivery system should not be used in conjunction with other stents.

Special care must be taken not to handle or in any way disrupt the stent on the delivery system.

This is most important during catheter removal from packaging, mandrel removal, placement over the guide wire, and advancement through a Rotating Hemostatic Valve (RHV) adapter and guiding catheter hub.

Do not hold the sheath or stent during mandrel removal.

**Stent Placement – Precautions**

Use with bleedback control hemostatic valves is not recommended.

The RX Acculink Carotid Stent System is not compatible with any guide wire larger than 0.014” (0.36 mm).

Leave the safety lock closed until the stent is ready to deploy.

The RX Acculink Carotid Stent System must be used with a guiding catheter or introducer sheath to maintain adequate support of the 0.014” guide wire throughout the procedure.

For best device performance, the guide wire exit notch should remain within the guiding catheter or sheath.

Ensure the stent system is fully flushed with heparinized saline prior to use. Do not use the delivery system if flush is not observed exiting at the distal end of the sheath.

Do not attempt to pull a partially expanded stent back through the guiding catheter or sheath; dislodgment of the stent from the delivery system may occur.

Venous access should be available during carotid stenting to manage bradycardia and / or hypotension by either pharmaceutical intervention or placement of a temporary pacemaker, if needed.

When catheters are in the body, they should be manipulated only under fluoroscopy.

Radiographic equipment that provides high quality images is needed.

The delivery system is not designed for use with power injection. Use of power injection may adversely affect device performance.

If resistance is met during delivery system introduction, the system should be withdrawn and another system used.

Prior to stent deployment, remove all slack from the delivery system.

When more than one stent is required to cover the lesion, or if there are multiple lesions, the distal lesion should be stented first, followed by stenting of the proximal lesion. Stenting in this order obviates the need to cross the proximal stent for placement of the distal stent and reduces the chance of dislodging stents that have already been placed.

If overlap of sequential stents is necessary, the amount of overlap should be kept to a minimum (approximately 5 mm). In no instance should more than 2 stents overlap.

**Post-Implant – Precautions**

Care must be exercised when crossing a newly deployed stent with other interventional devices to avoid disrupting the stent geometry and placement of the stent.

In the event of thrombosis of the expanded stent, thrombolysis and PTA should be attempted.

 **POTENTIAL ADVERSE EVENTS**

Based on the literature, and on clinical and commercial experience with carotid stents and

embolic protection systems, the following alphabetical list includes possible adverse events

associated with use of these devices:
• Allergic reactions to anti-platelet agents / contrast medium • Aneurysm • Angina / coronary ischemia • Arrhythmia • Arterial occlusion / thrombosis at puncture site or remote site • Arteriovenous fistula • Bacteremia or septicemia • Bleeding from anticoagulant or antiplatelet medications • Cerebral edema • Cerebral hemorrhage • Cerebral ischemia / transient ischemic attack (TIA) • Congestive heart failure (CHF) • Death • Detachment and / or implantation of a component of the system • Emboli, distal (air, tissue or thrombotic emboli) • Emergent or urgent endarterectomy surgery (CEA) • Fever • Filter thrombosis / occlusion • Groin hematoma, with or without surgical repair • Hemorrhage, with or without transfusion • Hyperperfusion syndrome • Hypotension / hypertension • Infection and pain at insertion site • Ischemia / infarction of tissue / organ • Myocardial infarction (MI) • Pain (head, neck) • Pseudoaneurysm, femoral • Renal failure / insufficiency • Restenosis of stented segment • Seizure • Severe unilateral headache • Stent / filter entanglement / damage • Stent embolization • Stent malposition • Stent migration • Stent thrombosis / occlusion • Stroke / cerebrovascular accident (CVA) • Total occlusion of carotid artery • Vessel dissection, perforation, or rupture

• Vessel spasm or recoil

Prior to use, please reference the Instructions for Use at www.abbottvascular.com for more information on indications, contraindications, warnings, precautions, and adverse events.

Acculink is a trademark of the Abbott Group of Companies.



**Xact® Carotid Stent System**

**INDICATIONS**

The *Xact* Carotid Stent System (*Xact*), used in conjunction with the Emboshield Embolic Protection System is indicated for the improvement of the lumen diameter of carotid arteries in patients considered at high risk for adverse events from carotid endarterectomy who require percutaneous carotid angioplasty and stenting for occlusive artery disease and meet the criteria outlined below:

Patients with carotid artery stenosis (≥ 50% for symptomatic patients by ultrasound or angiography or ≥ 80% for asymptomatic patients by ultrasound or angiography), located between the origin of the common carotid artery and the intra-cranial segment of the internal carotid artery AND

Patients must have a reference vessel diameter ranging between 4.8 mm and 9.1 mm at the target lesion.

**CONTRAINDICATIONS**

Contraindications associated with angioplasty must be considered when using the *Xact* Carotid Stent System. These include, but are not limited to:

• Patients in whom anticoagulant and / or antiplatelet therapy is contraindicated.

• Patients with severe vascular tortuosity or anatomy that would preclude the safe introduction of the Guiding Catheter / Introducer Sheath, BareWire guide wire, Emboshield Delivery Catheter, Filtration Element, and / or Retrieval Catheter.

• Patients with a known hypersensitivity to nickel-titanium.

• Patients with uncorrected bleeding disorders.

• Lesions in the ostium of the common carotid artery.

 **WARNINGS**

**Only physicians who have received appropriate training and are familiar with the principles, clinical applications, complications, side effects and hazards commonly associated with carotid interventional procedures should use this device.**

**General**

Refer to instructions supplied with all interventional devices to be used with the *Xact* Carotid Stent System for their intended uses, contraindications, and potential complications.

The safety and efficacy of the *Xact* Carotid Stent System has not been demonstrated with embolic protection systems other than the Emboshield Embolic Protection System.

The long-term performance (> 1 year) of the *Xact* Carotid Stent System has not been established.

As with any type of vascular implant, infection secondary to contamination of the stent may lead to thrombosis, pseudoaneurysm, or rupture.

Stenting across a major bifurcation may hinder or prevent future diagnostic or therapeutic procedures.

In patients requiring the use of antacids and / or H2-antagonists before or immediately after stent placement, oral absorption of antiplatelet agents (e.g. aspirin) may be adversely affected.

The appropriate antiplatelet and anticoagulation therapy should be administered pre- and post-procedure as suggested in these instructions. Special consideration should be given to those patients with recently active gastritis or peptic ulcer disease.

When multiple stents are required, stent materials should be of similar composition.

The safety and effectiveness of the *Xact* Carotid Stent System has NOT yet been established in patients with the characteristics noted below.

• Low to moderate risk for adverse events from carotid endarterectomy.

• Previously placed stent in target artery.

• Total occlusion of target lesion.

• Angiographically visible thrombus.

• Carotid string sign (a tiny, long segment of contrast in the true lumen of the artery).

• Vessel anatomy precluding the use of the stent system or appropriate positioning of the embolic protection system.

• Presence of carotid artery dissection prior to initiation of the procedure.

• Evidence of a stroke within the previous 30 days.

• History of ipsilateral stroke with fluctuating neurologic symptoms within 1 year.

• History of intracranial hemorrhage within the past 3 months.

• Any condition that precluded proper angiographic assessment or made percutaneous arterial access unsafe, (e.g. morbid obesity, sustained systolic blood pressure > 180 mmHg).

• Contraindication to aspirin, or to clopidogrel AND ticlopidine, or stent material.

• History or current indication of bleeding diathesis or coagulopathy including thrombocytopenia or an inability to receive heparin in amounts sufficient to maintain an activated clot time at > 250 seconds.

• Hemoglobin (Hgb) < 8 gm / dl (unless on dialysis), platelet count < 50,000, INR > 1.5 (irreversible), or heparin-associated thrombocytopenia.

• Known cardiac sources of emboli.

• Atherosclerotic disease involving adjoining vessels precluding safe placement of the guiding catheter or sheath.

• Other abnormal angiographic findings that indicated the patient was at risk of a stroke due to a problem other than that of the target lesion, such as: ipsilateral arterial stenosis greater in severity than the target lesion, cerebral aneurysm, or arteriovenous malformation of the cerebral vasculature.

• Severe dementia.

• Life threatening allergy to contrast media that could not be treated.

• Pregnant patients or patients under the age of 18.

• Patients in whom femoral access is not possible.

• Patients with aneurysmal dilation immediately proximal or distal to the lesion.

The safety and effectiveness of concurrent treatment of lesions in patients with bilateral carotid artery disease have not been established.

**PRECAUTIONS**

Carefully inspect device components prior to use to verify that they have not been damaged and that the size, shape and condition are suitable for the procedure for which they are to be used. A device or access device which is kinked or damaged in any way should not be used. If pouch is damaged do not use.

Confirm the compatibility of the *Xact* Stent Delivery System with the interventional devices before actual use.

Precautions to prevent or reduce clotting should be taken when any interventional device is used. Flush or rinse all devices entering the vascular system with sterile isotonic Heparinized saline prior to use.

Do not remove the stent from its delivery system as removal may damage the stent. The stent and delivery system are intended to be used in tandem. If removed, the stent cannot be put back on the delivery system.

The delivery system should not be used in conjunction with other stents.

To reduce the potential for the liberation of emboli during lesion crossing, the device should be carefully manipulated and not advanced against resistance.

During stent placement, 1.5 cm of vessel should be left between the distal margin of the stent and the Filtration Element. The stent delivery system should not contact the Filtration Element.

Venous access should be available during carotid stenting in order to manage bradycardia and/or hypotension by either pharmaceutical intervention or placement of a temporary pacemaker, if needed.

The device must only be flushed using the 3-ml syringe and flushing tip provided.

The outside diameter of the Outer Sheath is 5.7 Fr. An appropriate sized sheath/guiding catheter should be selected based on this diameter.

Do not use a prepared *Xact* Carotid Stent System if the stent is not fully constrained within the Delivery System.

Do not use if the stent is partially deployed.

If, after preparation, a gap between the catheter tip and the outer sheath exists, rotate the Deployment Actuator in an anti-clockwise direction until the gap is closed.

Advancement and deployment of the *Xact* Carotid Stent System should only be performed under fluoroscopic observation.

Do not advance any component, or section thereof, of the *Xact* Carotid Stent System against significant resistance. The cause of any resistance should be determined via fluoroscopy and remedial action taken.

Do not attempt to reposition the Delivery System once the stent has made contact with the vessel wall.

Do not torque the *Xact* Carotid Stent System.

If more than one stent is required to cover the lesion, or if there are multiple lesions, the distal lesion should be stented first, followed by stenting of the proximal lesion.

If overlap of sequential stents is necessary, the amount of overlap should be kept to a minimum.

 **MRI Information**

Non-clinical testing has demonstrated that the Xact Carotid stent is MR Conditional. It can be scanned safely under the conditions listed in the *Instructions for Use.*

**POTENTIAL ADVERSE EFFECTS**

As reported in the literature, the following adverse events are potentially associated with carotid stents and embolic protection systems:

• Abrupt closure • Allergic reactions • Aneurysm • Angina/Coronary ischemia • Arteriovenous Fistula • Bacteremia or septicemia

• Bleeding from anticoagulant or antiplatelet medications • Bradycardia/arrhythmia • Cerebral edema • Cerebral hemorrhage

• Congestive Heart Failure • Death • Drug reactions • Embolism (including air and device) • Emergent or urgent Endarterectomy

• Fever • Filter thrombosis / occlusion • Fluid overload • Groin hematoma, with or without surgical repair • Hemorrhage or hematoma

• Hemorrhagic stroke • Headache • Hypotension • Hyperperfusion syndrome • Hypertension • Infection / sepsis • Ischemia / infarction of tissue / organ • Myocardial Infarction • Other conduction disturbances • Pain and tenderness • Pain, infection, or discomfort at the access site • Pseudoaneurysm • Renal failure / insufficiency • Restenosis of the stented artery • Seizure

• Stent deformation, collapse, fracture, movement of stent, possibly requiring emergency surgery • Stent / filter entanglement / damage • Stroke or other neurological complications • Thromboembolic episodes • Thrombophlebitis • Total occlusion of the artery

• Transient ischemic attacks (TIAs) • Vascular access complications (e.g. loss of pulse, femoral artery pseudoaneurysm and infection) • Ventricular fibrillation • Vessel dissection, rupture, or perforation • Vessel thrombosis (partial blockage) • Unstable angina pectoris

Prior to use, please reference the Instructions for Use at www.abbottvascular.com for more information on indications, contraindications, warnings, precautions, and adverse events.

Xact is a trademark of the Abbott Group of Companies.

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**RX Accunet®
Embolic Protection System**

**INDICATIONS**

The RX Accunet EPS is indicated for use as a guide wire and embolic protection system to contain and remove embolic material (thrombus / debris) while performing angioplasty and stenting procedures in carotid arteries. The diameter of the artery at the site of filter basket placement should be between 3.25 mm and 7.0 mm.

**CONTRAINDICATIONS**

The RX Accunet EPS is contraindicated for use in:

• Patients in whom anticoagulant and / or antiplatelet therapy is contraindicated • Patients with severe vascular tortuosity or anatomy that would preclude the safe introduction of a guiding catheter, sheath, embolic protection system, or stent system • Patients with known hypersensitivity to nickel-titanium • Patients with uncorrected bleeding disorders.

 **WARNINGS**

Only physicians who have received appropriate training and are familiar with the principles, clinical applications, complications, side effects and hazards commonly associated with carotid interventional procedures should use this device.

**General**

Refer to the instructions supplied with all interventional devices to be used in conjunction with the RX Accunet EPS for their intended uses, contraindications, and potential complications.

The safety and effectiveness of this device as an embolic protection system have not been established in vasculatures outside the carotid arteries.

The safety and efficacy of the RX Accunet EPS have not been demonstrated with carotid stent systems other than the over-the-wire or RX Acculink Carotid Stent System.

The appropriate antiplatelet and anticoagulation therapy should be administered pre- and post-procedure as suggested in these instructions. Special consideration should be given to those patients with recently active gastritis or peptic ulcer disease.

 **Device Use**

This device is intended for single-use only. Do not reuse. Do not resterilize, as this can compromise device performance and increase the risk of cross contamination due to inappropriate reprocessing.

Do not use the product after the "Use By" date specified on the package.

Maintain the patient’s Activated Clotting Time (ACT) at > 250 seconds throughout RX Accunet EPS usage to prevent thrombus formation on the device.

During positioning, advance the RX Accunet EPS guide wire with filter basket and the delivery sheath as a unit. Advancing the guide wire independent of the delivery sheath may result in premature filter deployment.

Always advance or withdraw the RX Accunet EPS guide wire slowly using fluoroscopy to observe corresponding wire movement in general and tip movement in particular. Never push, auger, retract or torque a guide wire that meets resistance. If the wire tip becomes entrapped within a lesion or a device, such as a deployed stent, do NOT torque the guide wire. Determine the cause of resistance and take necessary remedial action. Torquing or retracting the guide wire against resistance may damage the wire, cause wire tip separation, or cause vessel trauma. Resistance may be felt and / or observed using fluoroscopy by noting any buckling of the guide wire tip.

Maintain continuous flush while removing and reinserting devices on the guide wire. Perform all exchanges slowly to prevent air embolism or trauma to the artery.

Overstretching of the artery may result in rupture and life-threatening bleeding.

When introducing the delivery system, confirm that the wire tip is free within the vessel lumen and is not directed against the vessel wall. Failure to do so may result in vessel trauma. Use the radiopaque marker on the interventional device to confirm position.

Avoid excessive movement of the RX Accunet EPS guide wire and filter basket during catheter device exchanges. Excessive movement of the deployed basket may cause vessel trauma or spasm.

The filter basket must be kept distal to the area to be covered by the stent and proximal to the petrous portion of the carotid artery to avoid excessive forces on the filter basket.

Allow for and maintain adequate distance between the radiopaque proximal bushing marker on the guide wire with filter basket and the stent delivery system or other compatible interventional devices to avoid potential entanglement.

Always keep the open filter basket distal to the deployed stent. Do not attempt to pull an open filter basket through the stent. Do not attempt to capture the filter basket by pulling it into the recovery catheter if the recovery catheter tip is in the stent area. Pulling the filter basket into the stent area may lead to stent-filter basket entanglement and / or basket detachment. If filter basket entanglement or detachment occurs, surgical conversion or collapsing the basket with a second stent should be considered.

Maintain proper guiding catheter / sheath support in the common carotid artery throughout the procedure. If guiding catheter / sheath access cannot be maintained, the case should be discontinued. Failure to maintain proper support of the guiding catheter / sheath can lead to prolapse of the catheter into the aortic arch, resulting in any of the following:

• Movement of an open filter through an undilated lesion; or • Filter-stent entanglement, filter basket detachment and / or proximal movement of the stent; or • Filter guide wire breakage.

Do not rotate either recovery catheter more than 90 degrees in either direction since this can result in the guide wire wrapping around the catheter.

Use with fixed (passive) hemostatic valves is not recommended.

If excessive debris is collected in the filter basket such that distal perfusion of dye is significantly reduced or no dye is perfusing past the filter, the RX Accunet EPS may have reached its maximum capacity to contain emboli. Remove and replace the RX Accunet EPS. Otherwise, it may be difficult to completely recover all embolic debris and the potential for thrombus formation may increase.

Discard unused RX Accunet and RX Accunet 2 Recovery Catheters after completing procedure. Failure to discard unused recovery catheters can result in any or all of the following: the use of a device past its “Use By” date; or the use of an incorrectly sized RX Accunet Recovery Catheter, which can cause loss of particulates from the filter basket during recovery, filter-stent entanglement, filter basket detachment and / or proximal movement of stent.

**PRECAUTIONS**

Guide wires are delicate instruments and should be handled carefully. Prior to use and when possible during the procedure, inspect the guide wire carefully for bends, kinks, or other damage. Do not use damaged guide wires. Using a damaged guide wire may result in vessel damage and / or inaccurate torque response.

Do not expose the delivery or recovery systems to organic solvents (e.g. alcohol) as structural integrity and / or function of the device may be impaired.

Confirm the compatibility of the RX Accunet EPS with the interventional devices before actual use.

To avoid air entrapment, do not leave the introducer tool in the valve while advancing the delivery system. Advance the delivery system slowly through the guiding catheter / sheath.

Ensure that the torque device is secured tightly to the guide wire to avoid difficulties with deployment. If the torque device is not tightened securely on the guide wire proper deployment may not occur.

For proper positioning of the filter basket, the vessel distal to the lesion should have an absence of excessive tortuosity and be of adequate length (approximately 4 cm distal to the lesion and proximal to the petrous portion of the vessel).

Reconfirm the filter basket position prior to deployment of the stent to ensure that there is adequate distance between the radiopaque proximal bushing marker on the guide wire with filter basket and the distal end of the desired stent position. Reposition the filter basket as necessary by gently advancing the guide wire. Under fluoroscopy, observe movement of the filter basket to the desired position.

Observe all guide wire movement in the vessels using fluoroscopic guidance.

Venous access should be available during carotid stenting in order to manage bradycardia and / or hypotension by either pharmaceutical intervention or placement of a temporary pacemaker, if needed.

The delivery system is not designed for use with power injection. Use of power injection may adversely affect device performance.

Do NOT deliver the RX Accunet EPS guide wire with filter basket through any interventional devices other than the RX Accunet EPS delivery sheath.

Removal of the RX Accunet EPS guide wire with filter basket through any interventional devices other than the RX Accunet and RX Accunet 2 Recovery Catheters has not been tested.

Care must be used when removing the filter basket through a newly deployed stent to maintain filter basket integrity and to avoid disrupting the stent geometry.

If the RX Accunet EPS is desired for intervention in additional vessels, use a new device.

**POTENTIAL ADVERSE EVENTS**

Based on the literature, and on clinical and commercial experience with the use of embolic protection systems with a carotid stent, the following alphabetical list includes possible adverse events associated with the use of this device:

• Allergic reactions to antiplatelet agents / contrast medium • Aneurysm • Angina / coronary ischemia • Arrhythmia • Arterial occlusion / thrombosis at puncture site or remote site • Arteriovenous fistula • Bacteremia or septicemia • Bleeding from anticoagulant or antiplatelet medications • Cerebral edema • Cerebral hemorrhage • Cerebral ischemia / transient ischemic attack (TIA) • Congestive heart failure (CHF) • Death • Detachment and / or implantation of a component of the system • Emboli, distal (air, tissue, or thrombotic emboli) • Emergent or urgent endarterectomy surgery (CEA) • Fever • Filter thrombosis / occlusion • Groin hematoma, with or without surgical repair • Hemorrhage, with or without transfusion • Hypotension / hypertension • Infection and pain at insertion site • Ischemia / infarction of tissue / organ • Myocardial infarction (MI) • Pain (head, neck) • Pseudoaneurysm, femoral • Renal failure / insufficiency • Restenosis of stented / dilated vessel • Seizure • Severe unilateral headache • Stent / filter entanglement / damage • Stroke / cerebrovascular accident (CVA) • Total occlusion of carotid artery • Vessel dissection, perforation, or rupture • Vessel spasm or recoil

Prior to use, please reference the Instructions for Use at www.abbottvascular.com for more information on indications, contraindications, warnings, precautions, and adverse events.

Accunet is a trademark of the Abbott Group of Companies.



**Emboshield® NAV6
Embolic Protection System**

**INDICATIONS**

The Emboshield NAV6 Embolic Protection System is indicated for use as a guide wire and embolic protection system to contain and remove embolic material (thrombus / debris) while performing angioplasty and stenting procedures in carotid arteries. The diameter of the artery at the site of the Filtration Element placement should be between 2.5 and 7.0 mm.

**CONTRAINDICATIONS**

The Emboshield NAV6 Embolic Protection System is contraindicated for use in: • Patients in whom anticoagulant and / or antiplatelet

therapy is contraindicated. • Patients with severe vascular tortuousity or anatomy that would preclude the safe introduction of the Guiding Catheter / Introducer Sheath, BareWire Filter Delivery Wire, RX Delivery Catheter, Filtration Element, and / or RX Retrieval Catheter. • Patients with a known hypersensitivity to nickel-titanium. • Patients with uncorrected bleeding disorders. • Lesions in the ostium of the common carotid artery.

**WARNINGS**

Only physicians who have received appropriate training and are familiar with the principles, clinical applications, complications, side effects and hazards commonly associated with carotid interventional procedures should use this device. General Warnings Refer to instructions supplied with all interventional devices to be used with the Emboshield NAV6 Embolic Protection System for their intended uses, contraindications, and potential complications. Safety and effectiveness of this device as an embolic protection system has not been established in vasculatures outside of the carotid arteries (coronary, cerebral or peripheral). The safety and efficacy of the Emboshield NAV6 Embolic Protection System has not been demonstrated with carotid stent systems other than the Xact® or Acculink® Carotid Stent Systems. The appropriate antiplatelet and anticoagulation therapy should be administered pre- and post-procedure as suggested in these instructions. Special consideration should be given to those patients with recently active gastritis or peptic ulcer disease.

**Specific Warnings**

The Emboshield NAV6 device can only be used with the BareWire™ Filter Delivery Wire. Use of the device with any guidewire other than the BareWire™ Filter Delivery Wire will lead to loss of the Filtration Element during the procedure or an inability to retrieve the Filtration Element.

**PRECAUTIONS**

Carefully inspect device components prior to use to verify that they have not been damaged and that the size, shape and condition are suitable for the procedure for which they are to be used. A device or access device which is kinked or damaged in any way should not be used. Confirm the compatibility of the Emboshield NAV6 Embolic Protection System with the interventional devices before actual use. Precautions to prevent or reduce clotting should be taken when any interventional device is used. Flush or rinse all devices entering the vascular system with heparinized normal saline or alternative anticoagulant, prior to use. The Emboshield NAV6 Embolic Protection System must be used with a guiding catheter or introducer sheath to maintain adequate support for the BareWire Filter Delivery Wire throughout the procedure. To reduce the potential for the liberation of emboli during lesion crossing, the device should be carefully manipulated and not advanced against resistance. If the Filtration Element moves into the stented segment prior to retrieval, DO NOT RETRIEVE WITHIN THE STENT. Advance the RX Retrieval Catheter so that its tip opposes the proximal portion of the Filtration Element and gently push the Filtration Element distally until it is situated in an unstented portion of vessel. Retrieval can then proceed. Maintain proper guiding catheter / sheath support in the common carotid artery throughout the procedure. Ensure that there is adequate distance between the proximal tip of the Filtration Element and the most distal tip of any interventional device to be introduced over the Filter Delivery Wire. The tip of an interventional device should not contact the Filtration Element. Failure to maintain adequate distance could result in Filtration Element engagement with the carotid stent system / interventional device tip and / or Filtration Element entanglement with the deployed stent. Ensure there is adequate distance between the Filtration Element and the guide wire step. Failure to maintain adequate distance could result in inadvertent Filtration Element movement and Filtration Element engagement with the carotid stent system / interventional device tip and / or Filtration Element entanglement with the deployed stent if

the guide catheter or sheath prolapse occurs. If Filtration Element engagement and / or entanglement or Filter Element detachment occurs, surgical conversion or additional catheter based intervention may be required. Venous access should be available during carotid stenting in order to manage bradycardia and / or hypotension by either pharmaceutical intervention or place of a temporary pacemaker, if needed. Removal of the BareWire Filter Delivery Wire with the Emboshield NAV6 Filtration Element through any interventional devices other than the Emboshield NAV6 RX Retrieval Catheter has not been tested. The minimum expanded stent internal diameter required for retrieval of a large embolic load is 2.5 mm.

**ADVERSE EVENTS**

Potential Adverse Events

As reported in the literature, the following adverse events are potentially associated with carotid stents and embolic protection systems:

• Abrupt closure • Allergic reactions • Aneurysm • Angina/Coronary ischemia • Arteriovenous Fistula • Bacteremia or septicemia • Bleeding from anticoagulant or antiplatelet medications • Bradycardia/arrhythmia • Cerebral edema • Cerebral hemorrhage • Congestive Heart Failure • Death • Drug reactions • Embolism (including air and device) • Emergent or urgent Endarterectomy • Fever • Filter thrombosis/occlusion • Fluid overload • Groin hematoma, with or without surgical repair • Hemorrhage or hematoma • Hemorrhagic stroke • Headache • Hypotension • Hyperperfusion syndrome • Hypertension • Infection/sepsis • Ischemia/infarction of

tissue/organ • Loss of all of or part of the Filtration Element • Myocardial Infarction • Other conduction disturbances • Pain and tenderness • Pain, infection, or discomfort at the access site • Pseudoaneurysm • Renal failure/insufficiency • Restenosis of the stented artery • Seizure • Stent deformation, collapse, fracture, movement of stent, possibly requiring emergency surgery • Stent/filter entanglement/damage • Stroke or other neurological complications • Thromboembolic episodes • Thrombophlebitis • Total occlusion of the artery • Transient ischemic attacks (TIAs) • Vascular access complications (e.g. loss of pulse, femoral artery pseudoaneurysm and infection) • Ventricular fibrillation • Vessel dissection, rupture, or perforation • Vessel thrombosis (partial blockage) • Unstable angina pectoris • Vascular access complications (e.g. loss of pulse, femoral artery pseudoaneurysm and infection) • Vasospasm

Any adverse vent occurring involving the Emboshield NAV6 Embolic Protection System should be reported immediately to Abbott Vascular, Customer Service: 1-800 227-9902.

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