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MEDICAL POLICY – 7.01.97

Intracoronary Drug Delivery Balloon Procedures

BCBSA Ref. Policy:	7.01.97	
Effective Date:	**June 5, 2026***	RELATED MEDICAL POLICIES:
Last Revised:	Feb. 10, 2026	None
Replaces:	N/A	

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Introduction

Coronary artery disease happens when the heart's blood vessels become narrow or blocked. Many people are treated with a small metal tube called a stent to help keep the artery open. Sometimes the artery can become narrow again inside the stent. This is called in-stent restenosis (ISR). Doctors may use different tools to reopen the artery, including procedures that use balloons. A drug-coated balloon (DCB) is a special balloon that releases medicine to help prevent the artery from narrowing again. Researchers are still studying how well DCBs work for treating ISR. Drug-coated balloons for coronary in-stent restenosis are considered investigational (unproven). There's not enough evidence to show they are effective.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.

Policy Coverage Criteria

Procedure	Investigational
Percutaneous coronary intervention • **With a drug coated balloon for coronary ISR**	**The use of percutaneous coronary intervention (PCI) with a drug-coated balloon (DCB) in adult individuals for treating coronary in-stent restenosis (ISR) is considered investigational.**

Coding

Code	Description
CPT	
0913T	Percutaneous transcatheter therapeutic drug delivery by intracoronary drug-delivery balloon (e.g., drug-coated, drug-eluting), including mechanical dilation by nondrug-delivery balloon angioplasty, endoluminal imaging using intravascular ultrasound (IVUS) or optical coherence tomography (OCT) when performed, imaging supervision, interpretation, and report, single major coronary artery or branch
0914T	Percutaneous transcatheter therapeutic drug delivery by intracoronary drug-delivery balloon (e.g., drug-coated, drug-eluting) performed on a separate target lesion from the target lesion treated with balloon angioplasty, coronary stent placement or coronary atherectomy, including mechanical dilation by nondrug-delivery balloon angioplasty, endoluminal imaging using intravascular ultrasound (IVUS) or optical coherence tomography (OCT) when performed, imaging supervision, interpretation, and report, single major coronary artery or branch (List separately in addition to code for percutaneous coronary stent or atherectomy intervention)
HCPCS	
C9610	Catheter, transluminal drug delivery with or without angioplasty, coronary, non-laser (insertable)

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Evidence Review

Description

Drug-coated balloons (DCBs) deliver antiproliferative agents directly to the coronary vessel wall via a semicompliant balloon coated with drugs (typically paclitaxel, sirolimus, or everolimus) embedded in a carrier matrix that rapidly diffuses into the vessel wall during inflation, without requiring permanent stent implantation. This approach provides localized drug delivery to inhibit neointimal hyperplasia while avoiding additional metallic layers.

Background

In-Stent Restenosis

Coronary artery disease (CAD) is the leading cause of death worldwide and commonly presents as either chronic coronary syndrome with exertional angina or acute coronary syndromes due to plaque rupture or erosion with thrombotic occlusion.[1] Percutaneous coronary intervention (PCI) with drug-eluting stent (DES) implantation has become the standard of care for coronary revascularization because it provides an immediate and stable result, which reduces the risk of major adverse cardiac events (MACE) compared with balloon angioplasty alone.[2,3] Earlier generations of bare-metal stents were associated with neointimal hyperplasia and in-stent restenosis (ISR) in approximately 15% to 30% of treated lesions at mid- to long-term follow-up.[1] Although second-generation DES substantially lowered ISR and stent thrombosis compared with bare metal stents (BMS), a non-negligible risk of ISR and late thrombotic events persists.[3] ISR reflects a combination of smooth muscle cell proliferation, inflammatory response to stent-related vessel injury, and later neoatherosclerosis and vessel remodeling, and is more frequent in patients with long stents, diabetes, or complex lesion anatomy.[2,1] Patients who develop ISR may experience recurrent angina and ischemia and require repeat revascularization. ISR in multilayer or small-vessel segments can be particularly challenging to manage because additional stent layers may compromise lumen diameter, impair future surgical options, and increase the risk of recurrent restenosis or thrombosis. [2,4]

Treatment

For patients with coronary in-stent restenosis (ISR), the standard evidence-based approach is repeat stenting using drug-eluting stents (DES), while drug-coated balloons (DCBs) are under active investigation as an alternative therapy. DCBs are angioplasty balloons coated with an antiproliferative drug and an excipient, enabling rapid drug delivery and retention within the

vessel wall during balloon inflation. This technique aims to prevent neointimal hyperplasia without requiring a permanent implant.[1,2] DCB angioplasty purports several advantages over additional DES implantation, including: preservation of coronary vasomotion, avoidance of multiple stent layers and polymer-related inflammation, the potential for positive vessel remodeling and late luminal enlargement, avoidance of side branch jailing and carina shift in bifurcation lesions, and does not constrain future reinterventions with additional metallic scaffolds.[2,3,5]

Summary of Evidence

For individuals with in-stent restenosis (ISR) who receive percutaneous coronary intervention (PCI) with drug-coated balloons (DCBs), the evidence includes 1 meta-analysis, 1 network meta-analysis, 1 RCT, and 3 non-randomized studies. Relevant outcomes are major adverse cardiac events (MACE) (including cardiac death, myocardial infarction [MI], and target-lesion [TLR]/vessel revascularization [TVR]), stent or target-lesion thrombosis, and treatment-related procedural and long-term complications. A meta-analysis of 4 randomized trials comparing paclitaxel DCB with paclitaxel drug-eluting stents (DES) for coronary ISR and found no statistically significant differences for late lumen loss, recurrent binary restenosis, device success, MI incidence, or death at 6 to 9 months; however, sirolimus and everolimus DES were not included. A network meta-analysis of 18 ISR trials found that, compared with balloon angioplasty without a DCB, limus- and paclitaxel-coated balloons and second-generation DES each reduced MACE and TLR, with no significant difference in MACE between paclitaxel DCB and DES; however, DES was favored over DCBs in rankogram analysis driven by observed relative benefits in the rate of TLR. In the pivotal AGENT (patented paclitaxel DCB) IDE RCT of adults with coronary ISR, AGENT DCB reduced 1-year TLF, TLR, TVR, and TVF compared with the uncoated balloon, with similar all-cause and cardiovascular death and numerically fewer definite/probable stent thrombosis events. Prespecified subgroup analyses showed that AGENT maintained a lower 1-year TLF than the uncoated balloon in small-vessel ISR, larger-vessel ISR, and multilayer ISR, with no significant effect in single-layer ISR. Three nonrandomized sources, a small single-arm AGENT Japan ISR substudy (achieved the prespecified TLF performance goal at 6 months and 1 year), the chronic coronary syndrome (CCS) Dragon-Registry of 846 DES-ISR patients (favored thin-strut DES over paclitaxel DCB for TLR and related composites), and a manufacturer and user facility device experience (MAUDE) analysis of adverse event reports, provide conflicting but lower-certainty data on safety and comparative effectiveness. While DCB has shown effectiveness compared with plain balloon angioplasty, questions remain about its relative effectiveness compared with current-generation DES, and data on the durability of the FDA-approved AGENT device are limited. Ongoing evidence generation from the AGENT IDE

study, as well as additional well-conducted research, is required to assess the comparative effectiveness of DCB versus DES, establish the durability of the treatment effect, and elucidate which patients are most likely to benefit from DCB compared with other interventions. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in **Table 1**.

Table 1. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
Ongoing			
NCT04119986	Safety and Efficacy of Drug Coated Balloon Therapy for Coronary In-stent Restenosis in Patients With Coronary Heart Disease Under the Guidance of QFR (UNIQUE-DCB-II Study)	220	Dec 2028 (not yet recruiting)
NCT04470934	PMCF - Study on the Performance/Safety of SeQuent Sirolimus-Coated Balloon (SCB, Investigational Device) in Patients With Coronary Artery Disease	1302	Mar 2027 (active, not recruiting)
NCT04647253[a]	AGENT IDE: A Prospective, Randomized (2:1), Multicenter Trial to Assess the Safety and Effectiveness of the AgentTM Paclitaxel Coated PTCA Balloon Catheter for the Treatment of Subjects With In-Stent Restenosis (ISR)	600	Sep 2027 (active, not recruiting)
NCT04862052	OPtimal TrEatment for CoroNary Drug Eluting Stent In-Stent Restenosis: Paclitaxel Versus Sirolimus Coated Balloons Versus Everolimus Eluting Stents - the OPEN ISR Study	150	Jan 2025 (recruiting)
NCT04896177[a]	A Prospective, Multicenter, Randomized Controlled, Non-inferior Clinical Trial to Evaluate the Efficacy and Safety of Sirolimus Drug-eluting Coronary Balloon Catheter in Treatment of Coronary Bifurcation Lesions	280	Sep 2026 (recruiting)
NCT05656118	Safety and Efficacy of Paclitax Drug Coated Balloon Catheter (GenossÂ DCB) in Patients With Coronary In-	260	Dec 2028 (active, not recruiting)

NCT No.	Trial Name	Planned Enrollment	Completion Date
	stent Restenosis (ISR): A Prospective, Multi-center, Observational Study (GENISPIRE Registry)		
NCT05908331[a]	MagicTouch Sirolimus-coated Balloon for Treatment of In-Stent Restenosis in Coronary Artery Lesions	492	Jul 2028 (recruiting)
NCT06104007	Safety and Efficacy of Paclitaxel Coated PTCA Balloon Catheter With a Shellac Plus Vitamin E Excipient (GENOSSÂ DCB) in Patients With Coronary In-stent Restenosis (ISR): A Prospective, Multi-center, Observational Study	1000	Dec 2028 (recruiting)
NCT06492174[a]	AGENT IDE: A Prospective, Randomized (2:1), Multicenter Trial to Assess the Safety and Effectiveness of the AgentTM Paclitaxel Coated PTCA Balloon Catheter for the Treatment of Subjects With In-Stent Restenosis (ISR)	20	Dec 2027 (active, not recruiting)
NCT07045194[a]	A Prospective, Multi-center, Single-blind, Randomized (1:1), Non-inferiority Study Comparing Clinical Outcomes of the Virtue Sirolimus AngioInfusion Balloon (SAB) to the AGENT Paclitaxel Drug-Coated Balloon (DCB) in the Treatment of Coronary Artery In-stent Restenosis (ISR).	740	Oct 2032 (recruiting)

NCT: national clinical trial.

[a] Denotes industry-sponsored or cosponsored trial.

Practice Guidelines and Position Statements

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the policy conclusions.

Guidelines or position statements will be considered for inclusion if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

Drug-Coated Balloon Academic Research Consortium

The Drug-Coated Balloon (DCB) Academic Research Consortium published a position statement with the following recommendations regarding DCB for ISR:[5]

- DCB treatment is associated with a higher risk of TLR, but comparable risk of all-cause death, MI, or target lesion thrombosis compared to repeat DES.
    - Initial treatment with a DCB may be preferable to a DES when the mechanism of prior stent failure is clearly identified using intravascular imaging, appropriately addressed, and optimal lesion preparation is achieved. Implanting an additional DES layer is reserved for cases in which DCB therapy fails.
- DCB first approach is particularly appealing for patients with:
    - Multiple prior stent layers
    - ISR in small vessels
    - ISR in a bifurcated stent
- Repeat DES may be a more suitable option for:
    - DES ISR in large vessels
    - DES failure due to late neoatherosclerosis

European Society of Cardiology (ESC) / European Association for Cardio-Thoracic Surgery (EACTS)

The European Society of Cardiology (ESC) and European Association for Cardio-Thoracic Surgery (EACTS) guidelines for the management of chronic coronary syndromes (2024) make the following recommendations related to DCB:[14]

- DES is recommended over DCB for the treatment of in-DES restenosis**.** (Class I, A)

Medicare National Coverage

There is no national coverage determination.

Regulatory Status

In February 2024, the AGENT Paclitaxel-Coated Balloon Catheter (Boston Scientific) was approved by the US Food and Drug Administration (FDA) through the premarket approval (PMA) process (P230035) for use "after appropriate vessel preparation in adult patients undergoing percutaneous coronary intervention (PCI) in coronary arteries 2.0 mm to 4.0 mm in diameter and lesions up to 26 mm in length for the purpose of improving myocardial perfusion when treating in-stent restenosis (ISR)." The device had previously been granted FDA Breakthrough Device designation in January 2021.

Several additional DCBs remain as investigational devices in the United States and have not yet received FDA premarket approval for commercial use:

- In October 2024, the FDA granted Medtronic an investigational device exemption (IDE) approval for the Prevail™ paclitaxel-coated drug-coated balloon (DCB) coronary pivotal trial (Prevail Global), designed to evaluate the safety and effectiveness of Prevail for the treatment of coronary ISR and de novo small-vessel coronary disease.

- In October 2022 and January 2023, the FDA granted investigational device exemption (IDE) approvals for the SELUTION SLR sustained limus-release sirolimus-eluting balloon (MedAlliance, now Cordis) to evaluate sirolimus-coated balloon angioplasty for coronary ISR in October 2022 and for de novo small-vessel coronary lesions in January 2023.

- In April 2019, the FDA granted Breakthrough Device designation to the Virtue sirolimus-eluting balloon (Orchestra BioMed) for the treatment of coronary ISR. Virtue sirolimus angioinfusion balloon (SAB) has subsequently been granted Breakthrough Device designation for the treatment of coronary ISR and coronary small-vessel disease.
- In April 2019, the MagicTouch sirolimus-coated balloon (SCB) (Concept Medical) received FDA Breakthrough Device designation for the treatment of coronary artery disease in patients with ISR, and the MagicTouch SCB platform has since obtained IDE approvals for multiple indications, including de novo or small-vessel coronary disease.

No DCBs have been approved by the FDA for the treatment of de novo coronary lesions or small coronary vessel disease.

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History

Date	Comments
03/01/26	New policy, approved February 10, 2026, effective for dates of service on or after June 5, 2026, following 90-day provider notification. Add to Cardiology Section. Policy created with literature review through November 03, 2025. The use of percutaneous coronary intervention (PCI) with a drug-coated balloon (DCB) in adult individuals for treating intracoronary in-stent restenosis (ISR) is considered investigational.

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply.

Scope: Medical policies are systematically developed guidelines that serve as a resource for Company staff when determining coverage for specific medical procedures, drugs or devices. Coverage for medical services is subject to the limits and conditions of the member benefit plan. Members and their providers should consult the member benefit booklet or contact a customer service representative to determine whether there are any benefit limitations applicable to this service or supply. This medical policy does not apply to Medicare Advantage.