



## MASSACHUSETTS

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### Medical Policy

## Wireless Pressure Sensors in Endovascular Aneurysm Repair

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### Policy Number: 306

BCBSA Reference Number: 7.01.111A (For Plan internal use only)

NCD/LCD: NA

### Related Policies

- Cardiac Hemodynamic Monitoring for the Management of Heart Failure in the Outpatient Setting #[287](#)
- Endovascular Grafts for Abdominal Aortic Aneurysms #[098](#)
- Endovascular Stent Grafts for Disorders of the Thoracic Aorta #[233](#)

### Policy

#### Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue<sup>SM</sup> and Medicare PPO Blue<sup>SM</sup> Members

Wireless pressure sensors in the management (intraoperative and/or postoperative) of patients having endovascular aneurysm repair are [INVESTIGATIONAL](#).

### Prior Authorization Information

#### Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed [inpatient](#).

#### Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed [outpatient](#).

	Outpatient
Commercial Managed Care (HMO and POS)	This is <b>not</b> a covered service.
Commercial PPO and Indemnity	This is <b>not</b> a covered service.
Medicare HMO Blue <sup>SM</sup>	This is <b>not</b> a covered service.
Medicare PPO Blue <sup>SM</sup>	This is <b>not</b> a covered service.

### CPT Codes / HCPCS Codes / ICD Codes

*Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.*

*Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.*

## CPT Codes

There are no specific CPT codes.

## Description

The goal of abdominal aortic aneurysm (AAA) repair is to reduce pressure in the aneurysm sac and thus prevent rupture. Failure to exclude the aneurysm completely from the systemic circulation results in continued pressurization. An endoleak (persistent perfusion of the aneurysmal sac) may be primary (within the first 30 days post-op) or secondary (after 30 days post-op). Endoleaks are reported to occur in 10–50% of cases, and there are 5 types of endoleaks (I-V).

Wireless sensors implanted in an aortic aneurysm sac after endovascular repair are being investigated to measure post-procedural pressure. These implanted devices use various mechanisms to wirelessly transmit pressure readings to devices for measuring and recording pressure and have the potential to improve outcomes for patients who have had endovascular repair. It is thought that low pressures may correlate with positive prognoses and high pressures may indicate the need for revision.

It is also argued that wireless pressure sensors may change the need for or the frequency of monitoring of the aneurysm sac using contrast-enhanced computed tomography (CT) scans. They may improve postoperative monitoring.

An example of a wireless pressure sensor in endovascular aneurysm repair is the CardioMEMS EndoSure™ from CardioMEMS, Inc. All wireless pressure sensors in endovascular aneurysm repair are considered investigational regardless of the commercial name, the manufacturer or FDA approval status.

## Summary

Data are currently insufficient to indicate if use of this device improves clinical outcomes. The accuracy of the device in those with different types of endoleaks needs to be determined with larger numbers of patients. Also, the performance over time needs to be addressed. Work is also needed to determine the type and number of devices that might best be used in monitoring given that sac compartmentalization might lead to a pressure-sensing device missing an endoleak. It also is not known whether there might be important long-term complications from this implanted device. Furthermore, the extent to which the device can reduce imaging requirements following endovascular aneurysm repair (via direct comparison with CT) is undetermined. The evidence to date, which consists of small case series, is insufficient to permit conclusions concerning the effect of this device on health outcomes. Therefore, the use of wireless pressure sensors in detecting endoleaks in aneurysm repair is considered investigational.

## Policy History

Date	Action
2/2020	Policy updated with literature review through February 1, 2020, no references added. Policy statements unchanged.
1/2018	Clarified coding information.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
4/2011	Reviewed - Medical Policy Group – Cardiology and Pulmonology. No changes to policy statements.
1/19/2011	New policy effective 1/19/2011 describing ongoing non-coverage.

## Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

## References

1. Golzarian J, Valenti D. Endoleakage after endovascular treatment of abdominal aortic aneurysms: Diagnosis, significance and treatment. *Eur Radiol* 2006; 16(12):2849-57.
2. Sonesson B, Dias N, Malina M et al. Intra-aneurysm pressure measurements in successfully excluded abdominal aortic aneurysm after endovascular repair. *J Vasc Surg* 2003; 37(4):733-8.
3. Dias NV, Ivancev K, Malina M et al. Intra-aneurysm sac pressure measurements after endovascular aneurysm repair: differences between shrinking, unchanged, and expanding aneurysms with and without endoleaks. *J Vasc Surg* 2004; 39(6):1229-35.
4. Ohki T, Ouriel K, Silveira PG et al. Initial results of wireless pressure sensing for endovascular aneurysm repair: the APEX Trial--Acute Pressure Measurement to Confirm Aneurysm Sac EXclusion. *J Vasc Surg* 2007; 45(2):236-42.
5. Ellozy SH, Carroccio A, Lookstein RA et al. Abdominal aortic aneurysm sac shrinkage after endovascular aneurysm repair: correlation with chronic sac pressure measurement. *J Vasc Surg* 2006; 43(1):2-7.
6. Silveira PG, Miller CW, Mendes RF et al. Correlation between intrasac pressure measurements of a pressure sensor and an angiographic catheter during endovascular repair of abdominal aortic aneurysm. *Clinics (Sao Paulo)* 2008; 63(1):59-66.
7. Hoppe H, Segall JA, Liem TK et al. Aortic aneurysm sac pressure measurements after endovascular repair using an implantable remote sensor: initial experience and short-term follow-up. *Eur Radiol* 2008; 18(5):957-65.
8. Parsa CJ, Daneshmand MA, Lima B et al. Utility of remote wireless pressure sensing for endovascular leak detection after endovascular thoracic aneurysm repair. *Ann Thorac Surg* 2010; 89(2):446-52.