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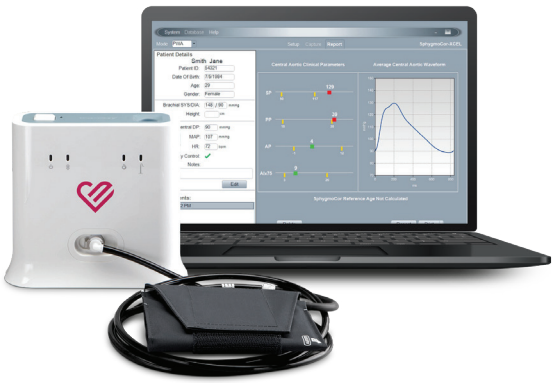
Reimbursement Guide for Billing Noninvasive Arterial Pressure Waveform Analysis (PWA)

The SphygmoCor® System enables noninvasive measurement of the central aortic pressure waveform. The incorporation of PWA was developed as complementary to brachial pressure measurements to help guide treatment decisions designed to prevent or reduce long-term target organ damage and cardiovascular events resulting from increased pressure.



SphygmoCor® XCEL Pulse Wave Analysis

Procedure Coding for PWA

Pulse Wave Analysis is reported using the following CPT® Code, which was established by the AMA in 2016.

CPT® Code 93050

Arterial pressure waveform analysis for assessment of central arterial pressures, includes obtaining waveform(s), digitization and application of nonlinear mathematical transformations to determine central arterial pressures and augmentation index, with interpretation and report, upper extremity artery, non-invasive.

CPT Code	2023 RVUs	2023 Medicare National Average Payment[1]
93050	0.47	$15.93
93050-TC	0.23	$7.79
93050-26	0.24	$8.13

Diagnostic Coding for PWA

The following ICD-10-CM codes are commonly used when reporting PWA:

ICD-10-CM	Description
I10	Essential (primary) hypertension
I11	Hypertensive heart disease
N18	Chronic kidney disease (CKD)
I25	Chronic ischemic heart disease
I12	Hypertensive chronic kidney disease

CPT® is a registered trademark of the American Medical Association (AMA)

Billing Notes

When submitting a claim for CPT 93050, attach a copy of the SphygmoCor report displaying the blood pressure pulse waveform and associated parameters in addition to any other documentation supporting medical necessity.

Do not report 93050 in conjunction with diagnostic or interventional intra-arterial procedures.

Coverage for PWA

Pulse Wave Analysis may be covered by Public and Commercial Payers.

Medicare does not have any National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs) pertaining to PWA. However, it does allow coverage and payment for services considered medically reasonable and necessary which are determined on a case-by-case basis.

Commercial payers have medical policies that differ from payer to payer. For coverage details, contact the patient's insurance plan directly.

PWA in Clinical Literature

End-organ damage associated with hypertension is related to central pressures as such pressures are directly transmitted to vital organs.[2]

Multiple clinical studies including several meta-analyses have evaluated central BP variables:

- These studies suggest that central BP generally has a higher predictive value for CV events and end-organ damage relative to peripheral blood pressure.[3-13]
- A recent meta-analysis of 24 prospective studies with 146,986 individuals[11] concluded that central hemodynamic variables are independent predictors of cardiovascular disease and all-cause mortality.

The substantial data in multiple peer-reviewed publications demonstrate an increased risk for CV events with elevated central pressures, particularly central systolic blood pressure (cSBP) and it is therefore reasonable to

infer that **reductions in hypertension based on cSBP will likely be associated with reduced CV events**, as has been proven with brachial blood pressure.

Use of PWA in Treatment of Hypertension

Treatment with combined medications are often the mainstay of hypertension treatment. Issues related to medications include undertreatment, overtreatment, compliance, drug cost, adverse events, and interactions with concomitant medications, all of which impact a patient's compliance.

Optimizing prescription medication and the self-administration of therapy is critical to controlling hypertension.

Incorporation of PWA into the treatment paradigm for hypertension may be considered based on clinical judgement. Examples where PWA may have a role in management include:

1. Confirmation of hypertension so that initiation of medication is more likely to be the correct decision for a patient, and to determine the appropriate class of hypertensive medication.
   Scenario: Concurrent elevation in brachial and central pressures.

2. Avoiding initiation of medication when white coat hypertension is suspected.
   Scenario: Elevated brachial pressures and normal central pressures, provided that an elevated heart rate does not confound the results.

3. Confirmation that increased treatment may not be needed.
   Scenario: Borderline high peripheral pressures and normal central pressures.

4. Targeting when to consider reduction of medication.
   Scenario: Normal peripheral and low central pressures, or extended period of normal. peripheral and normal central pressures (particularly in the setting of medication tolerance issues).

References

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"The Gold Standard" in
Central Blood Pressure Analysis

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