

## Ambulatory Blood Pressure Monitoring

<b>Policy ID:</b>	HHO-DE-MP-1032
<b>Approved By:</b>	Highmark Health Options – Market Leadership
<b>Provider Notice Date:</b>	12/15/2021; 03/01/2023
<b>Original Effective Date:</b>	01/15/2022; 04/01/2023
<b>Annual Approval Date:</b>	08/19/2021; 11/30/2022
<b>Last Revision Date:</b>	08/19/2021; 11/30/2022
<b>Products:</b>	Medicaid
<b>Application:</b>	All participating hospitals and providers
<b>Page Number(s):</b>	1 of 7

### Disclaimer

Highmark Health Options medical policy is intended to serve only as a general reference resource regarding coverage for the services described. This policy does not constitute medical advice and is not intended to govern or otherwise influence medical decisions.

### POLICY PURPOSE & STATEMENT

Health Options may provide coverage under the medical-surgical benefits of the Company's Medicaid products for medically necessary benefits. This policy is designed to address medical necessity guidelines that are appropriate for the majority of individuals with a particular disease, illness or condition. Each person's unique clinical circumstances warrant individual consideration, based upon review of applicable medical records. The qualifications of the policy will meet the standards of the National Committee for Quality Assurance (NCQA) and the Delaware Department of Health and Social Services (DHSS) and all applicable state and federal regulations.

### DEFINITIONS

**Ambulatory Blood Pressure Monitoring (ABPM)** – Measuring of blood pressure at regular intervals. This technique allows a doctor to assess your blood pressure during your routine daily living.

**Highmark Health Options (HHO)** – Managed care organization serving vulnerable populations that have complex needs and qualify for Medicaid. Highmark Health Options members include individuals and families with low income, expecting mothers, children, and people with disabilities. Members pay nothing to very little for their health coverage. Highmark Health Options currently services Delaware Medicaid: Delaware Healthy Children Program (DHCP) and Diamond State Health Plan Plus LTSS (DSHP Plus LTSS) members.

### POLICY POSITION

Prior Authorization is required.

Ambulatory blood pressure monitoring is typically done over a 24-hour period with a fully automated monitor. This provides more detailed blood pressure information than a traditional reading obtained during office visits. The greater number of readings with ABPM ameliorates the variability of single blood pressure measurements and is more representative of the circadian rhythm of blood pressure compared to the limited number obtained during an office measurement.

Ambulatory Blood Pressure Monitoring (ABPM) maybe considered medically necessary for ANY of the following indications:

### **Adults**

- Suspected white coat hypertension (WCH) with no evidence of end-organ damage;
  - The physician has performed at least three blood pressure measurements at least one (1) week apart in the office; and
  - Blood pressure measurements by nonphysicians (e.g., nurse, technician) in the office have been done and stage one hypertension readings have been obtained but <180/110, not requiring immediate treatment with medications: and
  - Member has repeated blood pressure measurements at home over at least one (1) month, and the diagnosis of hypertension remains in question: or
- Resistant hypertension in individuals who are being treated with three (3) or more medications: or
- Hypertensive individuals with hypotensive symptoms thought to be related to antihypertensive medications or neurological symptoms: or
- For individuals whose symptomatology (paroxysms of excessive sweating, palpitations, apprehension) suggest episodic hypertension secondary to an adrenal tumor and office blood pressure measurements are repeated normal: or
- For evaluation of syncope or near syncope when used in conjunction with a 24-hour Holter monitor to determine whether symptoms are the direct result of an arrhythmia: or
- To investigate blood pressure changes in individuals with nocturnal angina.

ABPM for any other indication is considered experimental/investigational and therefore, noncovered, because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

### **Children/Adolescents**

ABPM may be considered medically necessary in children/adolescents greater than or equal to age five (5) in ANY of the following settings:

- Confirming the diagnosis of hypertension including differentiating true hypertension from WCH:
  - When office blood pressure measurements are in the elevated blood pressure category for one (1) year or more; **or**
  - When blood pressure measurements fall within the Stage 1 HTN category over three (3) clinic visits at least one (1) to two (2) weeks apart; or
  - When blood pressure measurements fall within the Stage 2 HTN category twice within one (1) week; or
- Assessing symptoms related to suspected drug-related hypotension; or
- Drug resistant hypertension, or
- To assess effectiveness of hypertensive treatment, or
- Children and adolescents with ANY of the following:
  - A history of aortic coarctation, or
  - A history of low birth weight, or
  - Chronic Kidney Disease (CKD) and structural renal abnormalities, or
  - Endocrine disorders associated with hypertension (e.g., Congenital adrenal hyperplasia, familial hyperaldosteronism, etc.), or
  - Genetic syndromes associated with hypertension (e.g., neurofibromatosis, Turner syndrome, Williams syndrome, sickle cell disease, etc.), or
  - Obesity, or

- Sleep-Disordered Breathing (SDP), or
- Type 1 Diabetes Mellitus (T1DM), or
- Type 2 Diabetes Mellitus (T2DM).

ABPM in children and adolescents should be used by experts in the field of pediatric nephrology and pediatric cardiology who are experienced in its use and interpretation.

ABPM for any other indication is considered experimental/investigational and therefore, non-covered, because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

**Noncovered services**

Noninvasive assessment of central blood pressure (e.g., SphygmoCor System) is considered experimental/investigational and therefore noncovered because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

**Adults**

BP Classification	Systolic BP, mm Hg*		Diastolic BP, mm Hg*
Normal	<120	and	<80
Prehypertension	120-129	and	<80
Stage 1 Hypertension	130-139	or	80-89
Stage 2 Hypertension	>140	or	>90

**Children**

For Children aged one (1)- < 13 Years of Age	For Children Aged ≥13 Years of Age
Normal BP: <90th percentile	Normal BP: <120/<80 mm Hg
Elevated BP: ≥90th percentile to <95th percentile or 120/80mm Hg to <95th percentile (whichever is lower)	Elevated BP: 120/<80 to 129/<80 mm Hg
Stage 1 HTN: ≥95th percentile to <95th percentile + 12 mmHg, or 130/80 to 139/89 mm Hg (whichever is lower)	Stage 1 HTN: 130/80 to 139/89 mm Hg
Stage 2 HTN: ≥95th percentile + 12 mm Hg, or ≥140/90 mm Hg (whichever is lower)	Stage 2 HTN: ≥140/90 mm Hg

**American College of Cardiology et al-2017**

The American College of Cardiology, with 10 other medical specialty societies, published guidelines on the prevention, detection, evaluation, and management of high BP in adults. Table below lists recommendations made.

**Table**

Recommendations	COR	LOE
"In adults with an untreated SBP greater than 130 mm Hg but less than 160 mm Hg or DBP greater than 80 mm Hg but less than 100 mm Hg, it is reasonable to screen	IIa	B-NR

for the presence of white coat hypertension by using either daytime ABPM or HBPM before diagnosis of hypertension"		
"In adults with white coat hypertension, periodic monitoring with either ABPM or HBPM is reasonable to detect transition to sustained hypertension"	IIa	C-LD
"In adults being treated for hypertension with office BP readings, not at goal and HBPM readings suggestive of a significant white coat effect, confirmation by ABPM can be useful"	IIa	C-LD
"In adults with untreated office BPs that are consistently between 120 mm Hg and 129 mm Hg for SBP or between 75 mm Hg and 79 mm Hg for DBP, screening for masked hypertension with HBPM (or ABPM) is reasonable"	IIa	B-NR
"In adults on multiple-drug therapies for hypertension and office BPs within 10 mm Hg above goal, it may be reasonable to screen for white coat effect with HBPM (or ABPM)"	IIb	C-LD

**COVERED PROCEDURE CODES**

Table	Style
93050	Arterial Pressure Waveform Analysis.
93784	Ambulatory Blood Pressure Monitoring, utilizing Report-generating Software, Automated, Worn Continuously for 24 Hours or Longer; Including Recording Scanning Analysis, Interpretation and Report.
93786	Ambulatory Blood Pressure Monitoring, Utilizing Report-generating Software, Automated, Worn Continuously for 24 Hours or Longer; Recording Only.
93788	Ambulatory Blood Pressure Monitoring, Utilizing Report-generating Software, Automated, Worn Continuously for 24 Hours or Longer; Scanning Analysis with Report.
93790	Ambulatory Blood Pressure Monitoring, Utilizing A System Such as Magnetic Tape And/or Computer Disk, For 24 Hours or Longer; Review with Interpretation and Report.

**NONCOVERED PROCEDURE CODE(S)**

<b>93050</b>	Arterial Pressure Waveform Analysis for Assessment Of Central Arterial Pressures, Includes Obtaining Waveform(s), Digitization And Application Of Nonlinear Mathematical Transformation To Determine Central Arterial Pressures And Augmentation index, With Interpretation And Report, Upper Extremity Artery, Non-invasive.
--------------	---

**Covered diagnosis codes for Procedure Codes: 93784, 93786, 93788, and 93790**

C74.00	C74.01	C74.02	D44.7	D57.00
D57.01	D57.02	D57.1	D57.20	D57.211

D57.212	D57.219	D57.3	D57.40	D57.411
D57.412	D57.419	D57.80	D57.811	D57.812
D57.819	E05.00	E05.01	E05.10	E05.11
E05.20	E05.21	E05.30	E05.31	E05.40
E05.41	E05.80	E05.81	E05.90	E05.91
E10.9	E11.9	E21.0	E21.1	E21.2
E21.3	E21.4	E21.5	E24.0	E24.8
E24.9	E26.01	E26.02	E26.09	E66.8
E66.9	F84.3	G47.30	G47.31	G47.32
G47.33	G47.34	G47.35	G47.36	G47.37
G47.39	I10	I11.9	I15.0	I15.1
I15.2	I15.8	I15.9	I20.8	I95.0
I95.1	I95.2	I95.3	I95.81	I95.89
I95.9	N18.1	N18.2	N18.4	N18.5
N18.6	N18.9	N18.30	N18.31	N18.32

N26.2	Q78.1	Q85.00	Q85.01	Q85.02
Q85.03	Q85.09	Q93.82	Q96.0	Q96.1
Q96.2	Q96.3	Q96.4	Q96.8	Q96.9
R03.0	R55			

## References

Centers for Medicare and Medicaid Services (CMS). National Coverage Determination (NCD). 20.19: Ambulatory blood pressure monitoring. [CMS Web site]. 07/01/03. Accessed 04/13/2021

O'Brien E, Dolan E. Ambulatory blood pressure monitoring for the effective management of antihypertensive drug treatment. *Clin Ther*. 2016;38(10):2142-2151.

Reino-González S, Pita-Fernández S, Seoane-Pillado et al. How in-office and ambulatory BP monitoring compare: A systematic review and meta-analysis. *J Fam Pract*. 2017;66(1):5-12.

Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical practice guideline for screening and management of high blood pressure in children and adolescents. *Pediatr*.

Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: Executive summary: A report of the American College of Cardiology/American Heart Association Task Force on clinical practice guidelines. *J Am Coll Cardiol*. 2018;71(19):2199-2269.

Kupferman J, Batsky D, Samuels J, et al. Ambulatory blood pressure monitoring and neurocognitive function in children with primary hypertension. *Pediatr Nephrol* 2018; 33:1765– 1771.

National Institute for Health and Care Excellence. Hypertension in adults: Diagnosis and management [NG136].2019; <https://www.nice.org.uk/guidance/ng1>

Muntner P, Shimbo D, Carey RM, et al. Measurement of Blood Pressure in Humans: A scientific statement from the American Heart Association. *Hypertens*. 2019;73(5):e35- e66.

Yang WY, Melgarejo JD, Thijs L, et al. Association of office and ambulatory blood pressure with mortality and cardiovascular outcomes. *JAMA*. 2019;322(5):409-420.

Hayes, Inc. Hayes Health Technology. Zio Patch (iRhythm Technologies Inc.) Long-term ambulatory cardiac rhythm monitoring. Lansdale, PA. Hayes, Inc.; 02/07/2019.

Aung K, Htay T. Relationship between outpatient clinic and ambulatory blood pressure measurements and mortality. *Curr Cardiol Rep*. 2019;21(5):28.

**POLICY UPDATE HISTORY**

11/30/2022	Approved in Medical Policy Committee
12/2022	Approved in QI/UM