



81st BRAZILIAN CONGRESS
OF CARDIOLOGY together with
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Blood Pressure Monitoring and Digital Medicine



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Conflict of Interest Disclosure



In accordance with Resolution No. 1,595/2000 of the Federal Council of Medicine and RDC Resolution No. 96/2008 of the Brazilian Health Regulatory Agency — Anvisa, I declare that, during the past 12 months, I have had the following financial interests, arrangements, or affiliations with the organizations listed below:

Potential conflict of interest	Company / organization
Congress travel or accommodation support	Servier, FQM, Novo Nordisk, Sanofi
Industry-sponsored clinical or experimental research	Amgen, Eli Lilly, Novo Nordisk, Janssen, AstraZeneca, Brace, Servier, Bayer, Daiichi Sankyo, EMS
Speaker at industry-sponsored events	Omron, Servier, Biolab, Brace, Novo Nordisk, Mantecorp, Daiichi Sankyo, FQM, EMS, Merck, Novartis
Industry-sponsored study steering committees	None
Institutional support from industry	None
Scientific texts in industry-sponsored journals	None
Industry shareholdings	None



The same office BP can hide different phenotypes

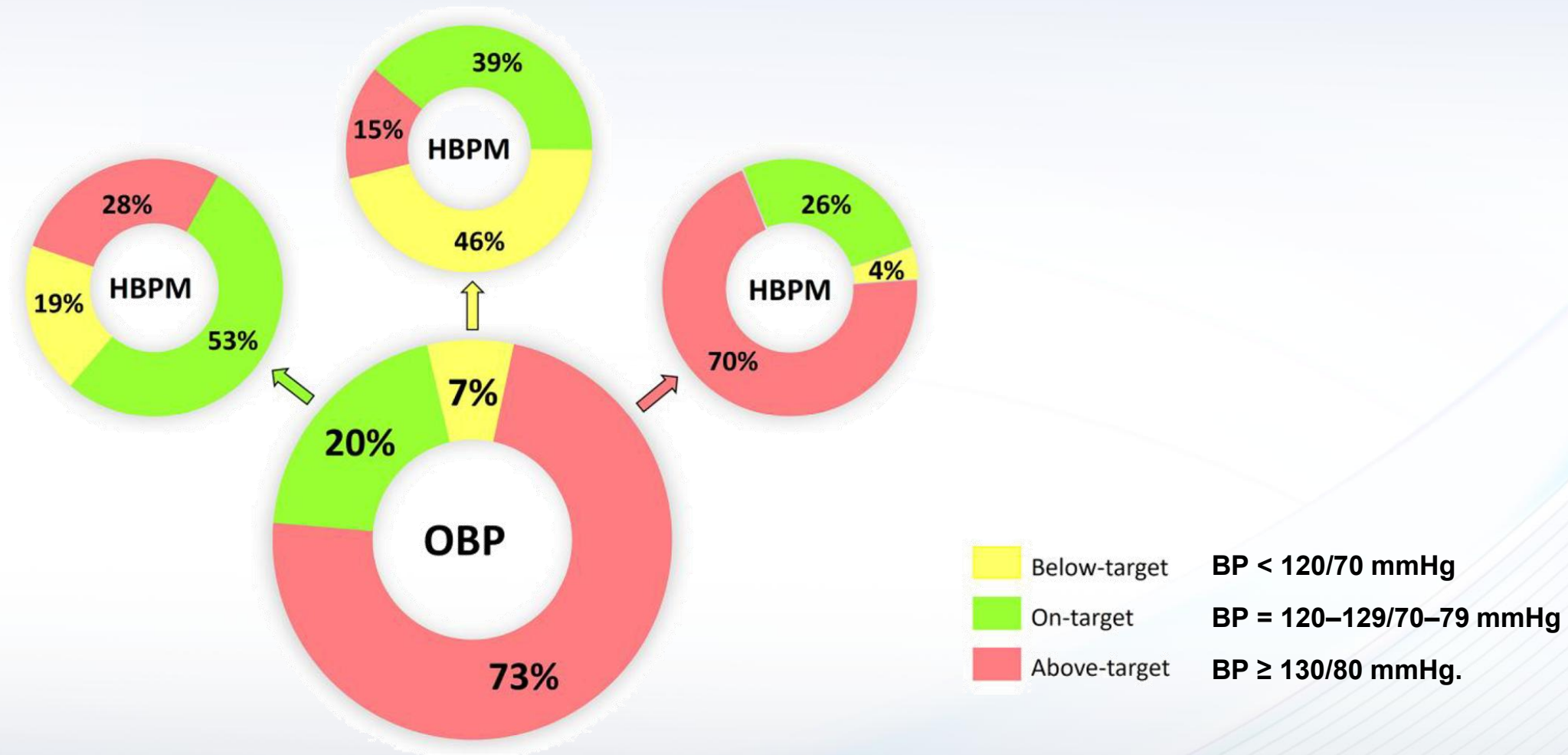


Two treated patients. Office BP: 126/76 mmHg.

Hypothetical cases.



Discrepancies between office and home blood pressure targets in patients with hypertension according to the 2024 European Society of Cardiology Hypertension Guidelines





The same office BP can hide different phenotypes



Two treated patients. Office BP: 126/76 mmHg.

	Patient A	Patient B
Mean home BP	122/74 mmHg	142/86 mmHg
Phenotype	Controlled hypertension	Masked uncontrolled hypertension

Home measurements change the next clinical decision.



Diagnostic thresholds depend on the measurement method



Setting	Brazil 2023 / 2025	ESC 2024
Office BP	$\geq 140/90$	$\geq 140/90$
Home BP	$\geq 130/80$	$\geq 135/85$
24-hour ABPM	$\geq 130/80$	$\geq 130/80$
Awake ABPM	$\geq 135/85$	$\geq 135/85$
Asleep ABPM	$\geq 120/70$	$\geq 120/70$

HBPM supports follow-up. ABPM adds sleep BP and a 24-hour profile.

mmHg; systolic and/or diastolic threshold. Adults outside pregnancy. Diagnostic thresholds differ from treatment targets. [1–3]



Reliable digital care begins with reliable measurements



4–6 days

Brazilian HBPM protocol

3 morning + 3 evening readings
24–36 valid measurements

Validated upper-arm device
Correct cuff size
5 minutes of seated rest
Back, feet and arm supported

Exclude the installation / training day. Preserve dates and original readings.

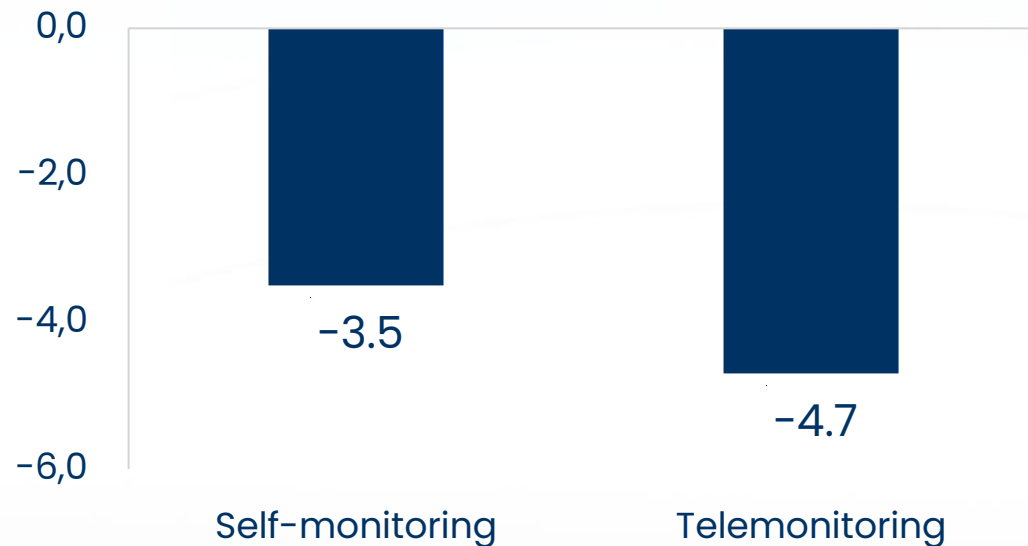


TASMINH4: home BP informed treatment titration



1,182 participants randomized. Primary outcome at 12 months.

Adjusted office SBP difference vs usual care (mmHg)



Comparison vs usual care	95% CI, mmHg
Self-monitoring: -3.5	-5.8 to -1.2
Telemonitoring: -4.7	-7.0 to -2.4

**Telemonitoring vs self-monitoring:
-1.2 mmHg (95% CI -3.5 to +1.2)
No demonstrated superiority.**



HOME BP: a structured digital programme lowered SBP



-3.4 mmHg

95% CI -6.1 to -0.8

Adjusted office SBP difference
vs usual care at 12 months

**622 adults with treated,
poorly controlled hypertension**

Home BP monitoring
Guided medication titration
Behavioural support

Internet access was required. The trial tested a multicomponent programme.



2026 pilots show why the care pathway matters



Randomized pilot	Finding at 6 months
REMOTE-control-HTN 60 randomized	Time in target range: 42.9% vs 24.8% $p=0.021$ with physician telemedical care
De Luca et al. 65 randomized, 49 completed	No significant difference in office SBP trends Group-by-time interaction $p=0.44$

**Small studies, short follow-up and different interventions.
No cardiovascular outcome evidence from these trials.**



Cuffless BP requires a different level of scrutiny



2025 AHA/ACC guideline

Cuffless devices are not recommended for diagnosis or management of hypertension.

Class 3: No Benefit. Level of Evidence C-LD.

Calibration, posture, movement and real-world reliability remain central validation challenges.



AI needs validation at the point of clinical use



Potential application	Evidence needed before clinical deployment
Flag implausible readings	Accuracy against verified measurements
Prioritize records for review	External validation and subgroup performance
Suggest a treatment action	Prospective safety and clinical utility

Clinicians remain responsible for interpretation and treatment.

Proposed evaluation framework, not an efficacy claim for a specific AI system. Measurement safeguards informed by [1,8,9].

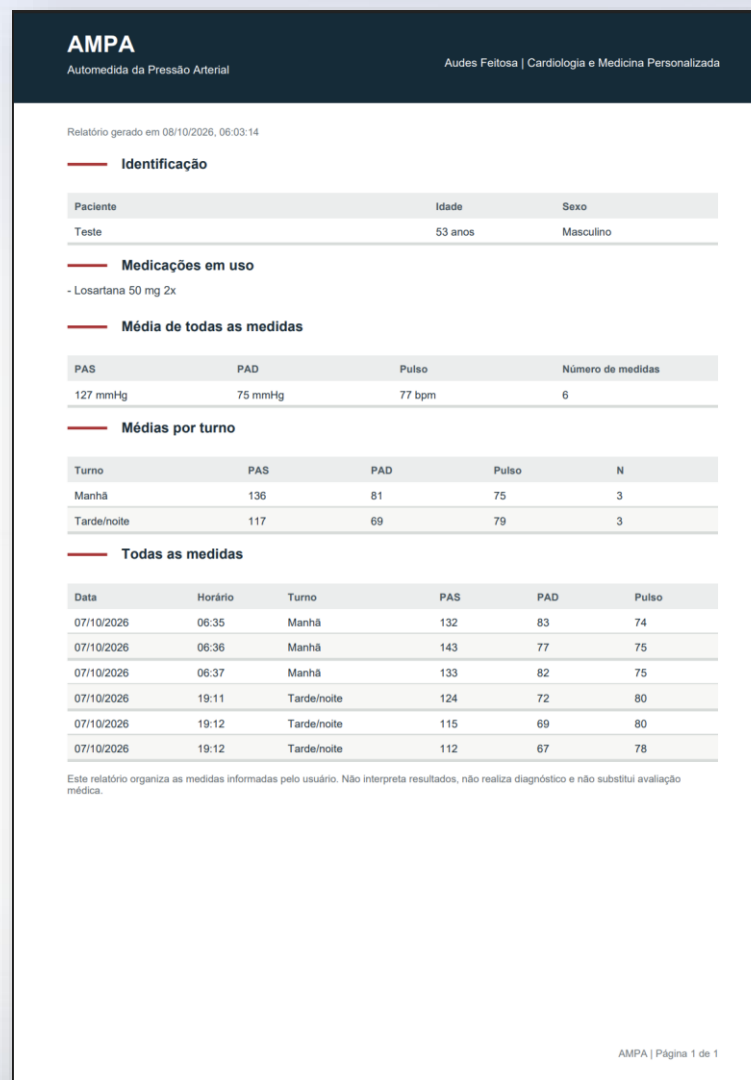
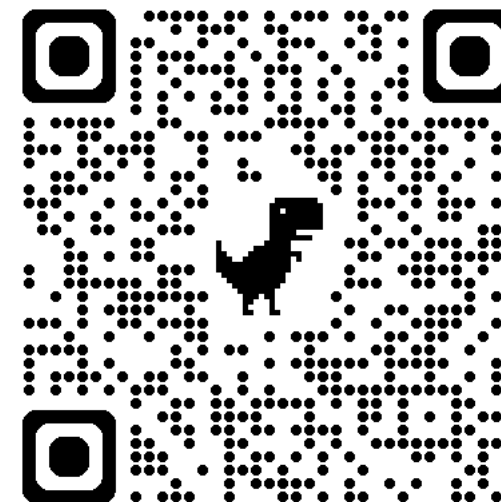


Digital monitoring needs a defined clinical response



Step	What the clinical team must define
1. Measure	Validated device, protocol and data quality
2. Review	Named reviewer and agreed response interval
3. Act	Confirm the pattern and adjust care when appropriate
4. Reassess	BP response, symptoms and treatment tolerance

Secure communication, an urgent-care plan and an alternative for patients who cannot use the digital pathway.





What changes clinical practice today



- 1 Office blood pressure measurement is unreliable.**
- 2 Reliable out-of-office BP clarifies the phenotype.**
- 3 Structured follow-up and treatment titration turn measurements into better BP control.**
- 4 Every new device or digital tool needs evidence for its intended clinical use.**



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Thank you





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