

Diagnosis and Management of Hypertension: Around-the-Clock Ambulatory Blood Pressure Monitoring Is Substantially More Effective and Less Costly Than Daytime Office Blood Pressure Measurements

Supplementary Appendix

Ramón C. Hermida, PhD, FASH, FAHA¹, Diana E. Ayala, MD, MPH, PhD¹,
Artemio Mojón, PhD¹, Michael H. Smolensky, PhD² and José R. Fernández, PhD¹

¹ Bioengineering & Chronobiology Laboratories; Atlantic Research Center for Information and Communication Technologies (AtlantTIC); University of Vigo, Campus Universitario, Vigo, 36310 Spain.

² Department of Biomedical Engineering, Cockrell School of Engineering, The University of Texas at Austin, Austin, Texas, 78712-0238 USA.

ADDRESS: Prof. Ramón C. Hermida, Ph.D.
Director, Bioengineering & Chronobiology Labs.
E.I. Telecomunicación
Campus Universitario
VIGO (Pontevedra) 36310, SPAIN
Ph.: 34-986-812148.
Fax: 34-986-812116.
E-mail: rhermida@uvigo.es

Table S1. Costs for purchase and maintenance of each ambulatory blood pressure monitoring (ABPM) device, assuming a conservative 10-year amortization period, plus required supplies during this time span.*

Category of costs	Price/unit	Total cost (€)	Explanatory notes
ABPM device	1,215.00	1,215.00	
Connecting cable	142.00	142.00	
BP cuff 24-32 cm	80.00	1,520.00	20 units (one included with ABPM device)
BP cuff 13-20 cm	80.00	400.00	5 units
BP cuff 32-42 cm	114.00	570.00	5 units
Periodic calibration	82.50	825.00	1/year
Average repair	186.20	186.20	If needed; once during the 10 year amortization period
Rechargeable batteries AA (set of 4)	12.64	101.12	2 sets replaced every 2.5 years
Battery charger	32.18	64.36	2 units
Internal lithium battery	4.69	18.76	Replacement every 2.5 years
Total cost		5,042.44	
Cost per 48h ABPM evaluation		4.38	115 evaluations/year†

*All prices are those currently listed for the SpaceLabs 90217 ABPM device and supplies (SpaceLabs Inc., Issaquah, WA, USA); they may differ for devices and products manufactured and marketed by other companies.

†When the monitoring span is 48h, each ABPM device can be utilized 3 times per week. Discounting holidays, vacation periods, time required for calibration and repairs, and additional non-working days, the estimated number of 48h ABPM evaluations/year is a conservative average of 120/device/year (95%CI [109.7–130.3]). The percentage of invalid 48h ABPM evaluations found in the Hygia Project was 4.13%, 95%CI [3.92–4.35], resulting in a rounded estimated number of valid 48h ABPM evaluations/device/year of 115 [106–125] with an estimated pro-rate cost of 4.38€ [4.03–4.76] per evaluation.

Table S2. Total costs (year 2015) of hospitalization in Spain due to elevated BP-associated vascular pathology according to Diagnosis-Related Groups (DRG) code classification.

DRG code	# cases	Mean stay (days)	# deaths	Average cost	Total cost (€)
14	39,130	8.12	2,416	4,581.43	179,271,360.00
15	3,765	6.12	157	3,349.19	12,609,700.00
16	1,037	8.24	71	4,654.67	4,826,892.50
17	1,611	5.54	22	3,623.61	5,837,636.00
22	293	5.65	2	3,512.60	1,029,191.81
106	63	14.11	3	36,433.47	2,295,308.50
107	1,124	17.85	8	18,092.77	20,336,272.00
109	2,386	11.75	15	12,830.56	30,613,716.00
110	2,873	9.62	199	14,011.91	40,256,216.00
111	3,422	6.46	37	8,150.81	27,892,072.00
112	12,862	2.80	25	3,725.15	47,912,880.00
113	3,286	17.71	154	12,975.85	42,638,640.00
114	1,896	12.98	20	8,414.10	15,953,133.00
115	1,126	6.83	12	9,005.53	10,140,227.00
121	9,034	8.61	0	4,697.06	42,433,240.00
122	10,626	5.52	0	3,601.00	38,264,224.00
123	2,719	6.19	2,719	4,051.37	11,015,675.00
124	13,283	7.47	79	4,480.89	59,519,664.00
125	18,562	3.97	22	2,680.42	49,753,956.00
127	67,438	7.01	3,993	3,570.95	240,817,728.00
130	8,535	6.80	490	3,788.28	32,332,970.00
131	8,202	4.50	210	2,823.19	23,155,804.00
132	1,491	5.65	45	3,111.83	4,639,738.50
133	1,913	3.93	16	2,282.64	4,366,690.00
134	3,091	5.10	32	2,845.27	8,794,730.00
140	10,559	5.23	275	2,787.21	29,430,150.00
141	6,028	5.69	64	2,898.00	17,469,144.00
142	6,390	4.20	15	2,312.72	14,778,281.00
143	13,163	3.54	17	1,945.92	25,614,146.00
144	4,186	7.47	149	4,420.89	18,505,846.00
145	3,827	5.15	25	3,316.82	12,693,470.00
478	4,873	8.50	70	9,251.47	45,082,412.00
479	4,822	4.95	34	7,062.94	34,057,496.00
532	4,718	9.29	520	4,823.88	22,759,066.00
544	63,110	9.18	10,236	4,626.79	291,996,704.00
546	1,164	20.62	88	26,958.57	31,379,776.00
550	12,217	11.85	1,063	10,167.75	124,219,400.00
796	1,808	15.19	24	14,368.09	25,977,506.00
797	1,673	10.28	8	11,770.88	19,692,682.00
808	7,416	5.47	196	6,839.00	50,718,024.00
810	11,132	8.88	2,922	5,384.32	59,938,248.00
811	17	32.59	4	21,576.82	366,805.94
832	11,665	4.95	64	2,845.20	33,189,258.00
833	904	18.69	82	25,443.70	23,001,104.00

849	90	17.63	0	21,697.39	1,952,765.13
850	374	13.75	0	20,764.39	7,765,882.00
851	2,485	4.62	3	21,437.82	53,272,984.00
852	3,228	4.60	17	5,730.38	18,497,666.00
853	15,646	5.50	149	7,098.46	111,062,504.00
854	15,873	4.43	34	5,589.85	88,727,688.00
880	2,708	8.48	109	5,082.69	13,763,924.00
892	914	6.10	5	8,139.69	7,439,676.50
				Total cost	2,140,060,272.88