ABPM/AOBP/Telemonitoring 2018 Hypertension Symposium



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KAISER PERMANENTE.



QUIZ QUESTION

41 year old healthy female on no medications, with the following BPs over several visits (readings are all 2nd BPs).

- 4/3/17: 151/100
- 4/25/17: 164/94
- 5/22/17: 172/100
- 7/24/17: 178/94

QUIZ QUESTION CONTINUED

- Physical exam including fundi normal
- EKG normal (no LVH)
- Cr 0.8
- Urine MA normal
- Cholesterol 189, HDL 35, A risk 1.9%



QUIZ QUESTION CONTINUED

Next steps:

- A: start HCTZ 12.5 mg daily
- B: start Lisinopril 20-HCTZ 25, ½ tab daily
- C: 24 hour ABPM
- D: AOBP
- E: Home BP

KP N	ATION	JAL	GUI	DELI	NES)
 Obtain measurements BP readings equal to or clinical judgment or rej office blood pressure (. Diagnose hypertension target organ damage (I Table 2: CORRESPONDIN 	outside of the clinic: r higher than those i gional protocol if obr AOBP) measuremen for BP 2 180/110 at eft ventricular hype G SBP/DBP VALUES	al setting for n Table 2, Ru aining BP o ts at ≥ 2 visi a single off rtrophy, hyp	r diagnostic con ow 1 = confirm † utside the clinic ts may be used. ice reading or ≥ ertensive retino	firmation befor the diagnosis of al setting is not 150/100 with c opathy, or hype	e starting trea ⁻ hypertensior possible. Aut linical eviden rtensive neph	atment. n. Use omated ce of iropathy).
	Office BP	AOBP	Home BPM	Day ABPM	Night ABPM	24-Hour ABPM
Row 1	140/90	135/85	135/85	135/85	120/70	130/80
Row 2	130/90	130/85	130/85	130/85	110/70	125/80
Office BP: Taken in the clini AOBP: Taken in the clinic se	ic setting using an osci etting using a commen nitoring (Home BPM):	llometric (pre tially availabl Taken by the	eferred) or aneroi e device that allo e patient at home	id device but not ws for measuren e (see Box 1). Aml	including auto ients to be take bulatory BP Me	mated office B en with patien poitoring

Ho	RE 1: CONFIRMATION OF DIAGNOSIS OF HYPERTENSION BP 2 180/110 SC BP 2 150/100 and clinical evidence of hypertensive target organ damage (e.g., LVH by echocardiogram, hypertensive reinopathy, hypertensive nephropathy)
	Office BP ≥ 140/90 V → home BP measurement
	Automated office BP measurement available? Automated Office BP ≥ 135/85
	Home BP measurement feasible? (See Box 1) 2135/85 Y + YES HTN N NO HTN Consider ambulatory BP measurement to confirm
	Ambulatory BP measurement feasible? Ambulatory BPM ≥ 130/80 (24 hour) or ≥ 135/85 (daytime) Y YES HTN No HTN
	Neither home nor ambulatory BP messurement feasible A diagnosis of HTN can be inferred from automated office BP messurement ≥ 135/85 at two separate visits.
	7



Home BP Protocol

- Check your BP 3 mornings between 6 am and 10 am and 3 evenings between 6 pm and 10 pm, over one week.
- Morning BP readings are taken within 1 hour of waking up and before morning medications and breakfast.
- Evening BP readings are taken prior to medications and at least 1 hour after eating.
- Please take 2 or 3 BP readings each time you measure your BP. Each should be at least 1 minute apart.

	Home B	P Smart ph	ras	: -		
		古道道 日外的 法保護 本語				
C HOMERENISTRUCTIONS How to Take Your	Blood Pressure at Home Buy an accurate blood	- L				
A HOMEBPINSTRUCTIONSSHORT TAKING YOUR BILL	LOOD PRESSURE AT HOME - over the course of	one week				
Buy an accurate blood pressure monitor.	How to Take Your Blood Pressur	e at Home	_			
 You can buy one from a Kaiser Perm Wrist and fingertip devices are not ac 	anente pharmacy or Healthy Living scor curate and should not be used.	0.	Sunday/Date:	Setols/Destolic	Monday/Da	te: Sestolic/Directolic
If you have your own blood pressure man	thine, bring it to an appointment. Ask s	aff to check your blood pressure with your device and				
with the office device to compare reading	is and validate your machine.		Time e m		Time o.m.	
Prepare yourself to get an accurate read DO	ING. DON'T		inne, print		Time, point	
Use the bathroom before you measure your blood pressure so that you are comfortable.	Do not cross your legs.					
Sit in a chair with your back supported and both feet resting on the ground.	Do not position the cuff over clothing.		Tuesday/Date Time, a.am	Systolic/Diastolic	Wednesday Time, a.m.	/Date: Systolic/Diastolic
Flex your arm at he elbow and rest it on a flat tabletop or other surface for support.	Do not talk when you take your reading.					
Put the cuff in direct contact with the skin of your arm.	Do not smoke, have caffeinated drinks, or exercise within 30 minutes before taking		Time, p.m.		Time n.m.	
St in a milet room.	your blood pressure.					
What are the hort times to measure blog	Courseau b		-			
Early morning. Measure within 1 hou	r of waking and before taking any morn	ng medicines.	Time, a.m.	e: Systolic/Diastolic	Time, a.m.	Systolic/Diastolic
 Evening: Measure 1 hour or more an Note: Morning readings are higher than 	evening readings for many people. Bec	use of this, it is important that at least half of your				
readings are morning readings.			Time, p.m.		Time, p.m.	
Take 3 sets of morning and 3 sets of ever the barrier of the set o	ning readings for best results. Each se	should include 2 to 3 readings.				
Home Blood Pressure Results Log	og to record blood pressure readings.		Saturday/Date			
Uneck your blood pressure 3 mornings during the week between 6 a.m. and 10 a.m.	reading.		Time, a.m.	Systolic/Diastolic	1	
and 3 evenings between 6 p.m. and 10 p.m. Your morning and evening readings can both	Wait 1 minute after the first reading, and				1	
be done on the same day or on separate days.	then take the second reading.		Time, p.m.			
Take 2 to 3 readings each time you take your blood pressure. Each should be at least 1	Wait 1 minute again, and then take the third reading.				-	
minute apart]	
	write all 2 to 3 readings down. Be sure to					

	Abbrev Expansion ☆ HOMEBPINSTRUCTIONS How to Take Your Blood Pressure at Home Buy an accurate blood pr ☆ HOMEBPINSTRUCTIONSSHORT TAKING YOUR BLOOD PRESSURE AT HOME - over the course of one week	
	Refresh (Ctri+F11) Close (Esc)	
TA - o - yi - e - tt - tt - tt - tt	ING YOUR BLOOD PRESSURE AT HOME or the course of one week, you should take your blood pressure at least 3 mornings and 3 evenings. In blood pressure should be checked in the seated position after resting for several minutes, with both legs on the floor, back supported, and your arm at heart level ch time you measure your blood pressure, you should take 2.3 readings, about one minute apart i morning reading should be taken between 6 pm and 10 am bofero your morning medication and before breakfast a evening reading should be taken between 6 pm and 10 pm before your evening medication and at least one hour after dinner. a variage of these readings should be <135%	

KAISER PERMANENTE.	KAISER PERMANENTE.		Homa Blood Pressure Results Log				
How to Take Your Blood Pressure at Home Buy an accurate blood pressure monitor. • No can be prefine 1. Keir Tremente • No can be prefine 1. Keir Tremente • No can be prefine 1. Keir Tremente		 Check years work here here were for the second secon	Clinck your blood pressure 3 monings during the versk between 6 a.m. and 10 a.m. and 3 remangs between 6 p.m. and 10 p.m. Wait 1 minutes after the fore randing, and then the the weeded maning.				
		Vise menting and vesting madings can both fer drive in the same day or on spatiate days. Take 2 to 3 yneadings such time you calls your blood pressure. Taks thind le react also immergent the same time of the same to note the days of the same to note the same time of the same time of the same time of the same time of the same time. The same time of the same					
Wrist and fingertip devices are not accurate and		Sunday/D	ate:	Monday/Date:	Tuesdar/Dr	itac:	
should not be used.		Time	Systolic/Diastolic	Time Systolic/Diastoli	c Time	Systolic/Disetolic	
If you have your own blood pressure machine, bring it to an appointment. Ask staff to check your blood		a.n	L /	am /	a.m.	/	
pressure with your device and with the office device to		2,0	1 /	am /	a.m.	1	
tomptor reasings and channe your macouse		0.0		am /	p.m.	1	
Prepare yourself to get an accurate reading.		p.n	a, 7	p.m. /	p.m.	1	
DO	DON'T	p.n	1. /	p.m. /	p.m.	/	
Use the hathroom before you measure your blood	· Do not cross your legs	Wednesda	ay/Date:	Thursday/Date:	Friday/Date		
pressure so that you are comfortable.	· Do not position the suff over	Time	Systolic/Diastolic	Time Systolic/Diastoli	Time	Systolic/Disetolic	
 Se is a chair with your back supported and both first resting on the ground. 	dothing.	a.n	. /	am /	a.m.	/	
· Flex your arm at the afflow and net it on a flat	 Do not talk when you take your reading. 	3.0	1 /	am /	a.m.	1	
tabletop or other surface for support.	· Do not unolae, have caffeinated	0.0		am /	0.00	1	
 Part the call' in direct constact with the data of your arm. 	drinks, or exercise within 30 min- area defens taking must bland	p.n	. /	p.m. /	p.m.	1	
 Sit is a quite room. 	pressure,	p.n	L /	p.m. /	p.m.	. /	
		Saturday/	Date:	Notes			
What are the best times to measure blood pressu	ne?	Tome	Systolic/Diastolic				
 Early morning. Measure within 1 hour of waking and bet 	one taking any minming medicines.	2.0	L /				
 Evening: Museure I hear or more after eating dinner bur Nittle: Monitor realines are higher than overlag mallage for 	before taking any avening medicines.	3.0	1 /				
important that at least half of your readings are men	ing roadings.						
How many readings should be taken?		p.n	1 /	Inime Hardim Init "Manging White Coat	their inensi di Chicel	Anternalise Income Anterna	
Take 3 sen of morning and 3 sen of evening makings for bears	sults. Each ort should include 2 to 3	p.n	s. /	here your physicies or other head & care profe haat addressed qualitants, presse conset and	nicrol. Tyru ham perakh jeur prysizza.	m health problems, or it yes	
readings. Use the Home Blood Personne Results Log on the back of this page to rearrid blood pressure readings.		STELL Section In Contract In C	California Personania Medical D 1915 Mary	nam Adrights manuel. B	lepted with permission h • Permanente Westcal Ge	en copyrighted natarial of tigs for, Northern California.	





Table.	Automated/Semiautomated Devices Used for Measurements of Blood Pressure in Large Outcome Trials That Have Used the	ıe
Automat	ed Office Blood Pressure Measurement Technique	

Trial	Device	Status of Observation	References
ACCORD	Model 907, Omron Healthcare, Lake Forest, IL	Attended	The ACCORD Study Group ²
SPS3	Colin BP-8800C, Press Mate, Meena Medical Inc, Bedford, TX	Attended	The SPS3 Study Group ³
SPRINT	Model 907, Omron Healthcare, Lake Forest, IL	Unattended	The SPRINT Research Group ⁷
НОТ	Visomat OZ, D2 International, Hestia Pharma GmbH, Germany	Attended	Hansson et al ⁹
TROPHY	HEM-705CP, Omron Healthcare, Lake Forest, IL	Attended	Julius et al ¹⁹
ONTARGET	HEM-757, Omron Corporation, Tokyo, Japan	Attended	Verdecchia et al ²⁰
TRANSCEND	HEM-757, Omron Corporation, Tokyo, Japan	Attended	Verdecchia et al ²⁰

For optimal standardization people are seated in a quiet room for 3 to 5 minutes without talking before measurements are taken as an average of 3 measurements with 1 minute apart. Measurements have been done unattended (unobserved) and fully automated in the SPRINT study (no other people in the room) while being attended (observed) in all other trials by investigator or technician who activated the device. ACCORD indicates Action to Control Cardiovascular Risk in Diabetes study HOT, Hypertension Optimal Treatment study; ONTARGET, Ongoing Telmisartan Alone and in Combination With Ramipril Global Enpoint Trial; SPRINT, Systolic Blood Pressure Intervention Trial; SPS3, Secondary Prevention of Small Subcortical Strokes study; TRANSCEND, Telmisartan Randomized Assessment Study in Aceintoleran Subjects With Cardiovascular Disease study; and TROPHY, Trial of Preventing Hypertension study.

Hypertension, May 2016 KAISER PERMANENTE. thrive

AOBP = Awake ABPM

 Table 2. Studies comparing AOBP measurement with AABP measurement: Mean overall AOBP was 137/79 mm Hg, and mean overall AABP was 137/79 mm Hg.

STUDY	NO. OF PATIENTS	POPULATION	AOBP, mm Hg	AABP, mm Hg
Myers et al,⁵ 2009	309	ABPM unit	132/75	134/77
Myers et al, ²¹ 2008	200 200	ABPM unit ABPM unit	133/72 132/76	135/76 134/77
Myers et al, ²² 2010	139	ABPM unit	141/82	142/81
Beckett and Godwin,25 2005	481	Family practice	140/80	142/80
Myers et al,26 2009	62	Hypertension clinic	140/77	141/77
Myers,27 2010	254	ABPM unit	133/80	135/81
Godwin et al,28 2011	654	Family practice	139/80	141/80
Myers et al, ²⁹ 2011	303	Family practice	135/77	133/74
Andreadis et al, ³⁰ 2011	90	Research unit	140/88	136/87

Myers.Can Fam Physician. 2014 Feb

	Mean bloo	d pressure* (mm	Hg)
	Centre for Studies in Primary Care ₁	ABPM referral unit ₂	CAMBO tria
Routine manual office BP	151/83	152/87	150/81
Automated office BP	140/80	132/75	135/77
Awake ambulatory BP	142/80	134/77	133/74











AOBP KEY POINTS

- Largely eliminates white coat HTN
- Equivalent to awake ABPM
- Emerging outcome data LV mass, CV outcomes, SPRINT; however overall body of evidence much less than ABPM and HBP.
- ESH/ESC 2013: "If feasible, automated recording of multiple BP readings in the office with the patient seated in an isolated room, though providing less information overall, might be considered as a means to improve reproducibility and make office BP values closer to those provided by daytime ABPM or HBPM."
- CHEP 2014: "Automated office blood pressure measurements can be used in the assessment of office blood pressure."
- USPSTF 2015: "Automated office blood pressure, which is an average of multiple automated measurements taken while the patient is alone in a room, may yield results similar to those of daytime ABPM."
- CHEP 2016: "preferred method of in-office BP measurement."
- Time constraint 8-10 minutes, but proper technique requires at least 6-7 minutes
- AOBP as possible adjunct to routine office BP, HBP, ABPM

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Ambulatory Blood Pressure Monitor or ABPM



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	ABPM Resources	S
Not an and the second secon		RESOURCES Matica Mathema Secondaria Matica Mathema Secondaria Seco
	24 to A Arabidatory Blood Pressure Parlent Instructions 26 ARP Monitor Report 26 Candial/Instruct Lan Agreement 26 Day for Arabidatory Blood Pressure Monitor	December 14, 2018 — # Köhns Kanar X. Taškanula December 14, 2018 — Köhns Kanar X. Taškanula December 14, 2016 — Könna Kanar X. Taškanula December 14, 2016 — Könna Kanar X. Taškanula







	ABPM Resource	es
		RESOURCES Marine Marine Marine In Marine Marine Marine Marine In Marine Marine Marine Marine In Marine Marine Marine Marine In Marine Marine
KAISER PERMANENTE. THIVE	24 Hour Andukdory Blood Pressuer Pullet's Instance 24 Add Monitor Ingot 24 Each Monitor Ingot 21 Gardienteret Laan Agreement 21 Diary for Ambulatory Blood Pressuer Monitor	Store





Nurses

- 1. Provide patient's instruction
- 2. Input ID information and adjust sleep time before releasing monitor (different frequency of measurement)
- 3. Download data, adjust actual sleep time in order for program to calibrate averages accurately, and forward results to MD.
- 4. Enter Message encounter
- 5. Remind physician if encounter is still opened after 7 days and help close the loop.



Paint: Q. Seach Paint: Card Search: Image: Ima	Weich Allyn CardinPerfect File Edit View Action Tools Help Print • Print • Print • Print •	Yint Preview	
Patient card - General Addess Histoy Image: Comparison of the state of the		ert.	Test date: -
	Type Date & time	Patient card - General Address Histoy	Ilyn. Advencing Frentiere Can*



Loan	Agre	em	ent
Louii	' 'S' C		

KAISER PERMANENTE.

Date	
Medical Record #	Pep
Patient Name	Age
Home Address:	
Phone ()	
Model: Welch Allyn Serial Number	Service Days
Tech:	_
Equipment Lo	an Agreement

I understands that I am responsible for this equipment and will return it on . I further understand that if I do not return the loaned equipment, I then enter agreement for the recovery of the cost of the equipment loaned.





Outline

- Logistic of incorporating ABPM into your clinic
 - Role of nurses and providers
 - Patient information and loan agreement

Interpretation of ABPM reports

- Required components of an ABPM report
- Dipping patterns
- Cases interpretation

















		All-Cause N	Nortality	Cardiovascula	r Mortality
		Main Effect	Heterogeneity	Main Effect	Heterogeneity
Dipping Parameters	Adjustment for 24-h SBP	HR (95% CI)	τ, /²	HR (95% CI)	τ, /2
SBP-NDR (1-SD increment)	Without 24-h SBP	1.18 (1.06–1.32)*	0.074, 35%	1.31 (1.14–1.50)*	0.100, 33%
	With 24-h SBP	1.13 (1.03–1.24)‡	0.052, 20%	1.23 (1.08–1.40)*	0.082, 25%
24-h SBP (1-SD increment)	With SBP-NDR	1.26 (1.15–1.39)†	0.052, 18%	1.51 (1.37–1.68)†	<0.001,0%
Nondipping (vs dipping)	Without 24-h SBP	1.40 (1.13–1.73)*	<0.001,0%	1.72 (1.24–2.40)*	0.142, 11%
	With 24-h SBP	1.33 (1.07–1.65)‡	<0.001,0%	1.57 (1.15–2.15)‡	0.066, 2%
Subgroups of dipping (vs nor	mal dippers)				
Extreme dippers	Without 24-h SBP	0.72 (0.47–1.12)	0.154, 8%	0.68 (0.35–1.34)	<0.001, 0%
	With 24-h SBP	0.76 (0.47-1.24)	0.224, 15%	0.71 (0.36–1.41)	<0.001, 0%
Reduced dippers	Without 24-h SBP	1.17 (0.96–1.42)	0.096, 5%	1.40 (1.00–1.96)	0.205, 23%
	With 24-h SBP	1.17 (0.90–1.53)	0.202, 40%	1.28 (0.89–1.84)	0.232, 27%
Reverse dippers	Without 24-h SBP	1.88 (1.07–3.31)‡	0.443, 65%*	2.15 (1.24–3.73)‡	0.420, 47%
	With 24-h SBP	1.73 (1.01-2.95)‡	0.408.60%±	1.84 (1.08–3.15)±	0.382.41%



	Physician ABPM Interpretation Documentation	
(a.:	C Place orders (En: Date: 8/29/2016) - Wt: (Mot entered for this visit) Ht: 8.185 m (7.26")	
SnapSho		
Problem	Litt Pref List Interactions Pgarmacy Pgolders CC Results Open Onders Sign Pinandal Benefits Calculator	
Charl Re	tew Neg order Search	
Review Fi	Townh. New order defaults Not using defaults	
Demogra	phics Procedures (1 Order)	
Synopsis	ANBULATORY BLOOD RESSURE MONITORING, >= 24 HP, PHYSICAN REVEW, INTERP AND RPT	
History	⁰o Normal Routine	
Letters		
MAR		
Immuniza	alors -	
Proactive	Care	
English Contraction		
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Netroin		
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Activity Ro	4Form Artise Teatmant Plane: NEACON TEATMENT OF AN 1	
Evaluate	Dt VRamouse Associate Auto-Associate Level of service	
Level of S	Service Contraction Contraction Contraction	
Close En	Marked galaxies (Children Charles) (Children Charles)	
	No encourter disproses present.	
Orders D	N/FAL 1	

Problem List	Filters:	Outstand	ing ordered on or a	ter 5/22/2016	6 (11)									
Charl Review	No.	Test			Code Type	Order Date	Auth MD	0r	der Statu	s Result Statu	Result Date	Comp Priorit	y Follow-up	Prov Stat
Review Flowsh	940	63061 AMEU	LATORY BLOOD F	RESSURE	CPT(R)	08/20/2016	NGUYEN	QUE Or	dered			Routin	1E	Ordered
Demographics	9387	164510 INITIAT	E NURSING TRAN	SFUSION O	Custom	08/15/2016	DUMMY,	RANS OF	dered			Routin	1E	Ordered
Synàpsis	9387	64509 PACKS	ED RED CELLS PR	NODUCT (P9	HCPCS	08/15/2016	DUMMY,	RANS OF	dered			STAT		Ordered
History	9326	08782 REFE	RRAL HOME HEAL	TH CARE [2	Custom	07/28/2016	DUMMY,	RANS On	dered			Routin	N	Ordered
Letters	9328	08783 REFE	RRAL PALLIATIVE	CARE [2110	Custom	07/28/2016	DUMMY,	RANS Or	dered			Routin	1E	Ordered
W/D	9328	08785 REFE	RRAL HOSPICE (2	00326]	Custom	07/28/2016	DUMMY,	RANS OF	dered			Routin	1E	Ordered
MAT.	930	522211 CBC N	IO DIFFERENTIAL	[85027A]	CPT(R)	07/21/2016	BRODER	BENJ OF	dered			Routin	N	Ordered
Immunications	9306	512669 CBC N	IO DIFFERENTIAL	[85027A]	CPT(R)	07/21/2016	DUMMY,	RANS OF	dered			Routin	fé	Ordered
Proactive Care	9216	891055 ELECT	ROCARDIOGRAM	ROUTINE,	CPT(R)	06/23/2016	DUMMY,	EST (Or	dered			Routin	1E	Ordered
Flowsheets	919	17558 ADMIT	TO INPATIENT (24	4425]	Custom	06/16/2016	DUMMY,	RANS OF	dered			Yes Routin	1E	Ordered
Order Entry	9125	21052 CBC N	IO DIFFERENTIAL	[85027A]	CPT(R)	05/25/2016	DUMMY,	EST (Re	sulted	in process	05/23/2016	Routin	té	Open
Allergies	- Specimer	1		Resulting	j Lab			Resu	ilts Mess	age				
Nedications	Type:			Lab name			5	Reci	pient					
Education	Calendard			Technisis	-		- 1						_	
care Directives	Collected	oy.		recurricia	n									
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Evaluate CX				Resuring				I Se	end result	s message	L CC lis	st only		



Nr.		Date & Time	Syst.	МАР	Diast.	HR	РР	RPP Com
1	1	7/7/2016 9:38:00	129	89	71	70	58	9030 Man
2	2	7/7/2016 10:03:00	124	94	76	65	48	8060
3	3	7/7/2016 10:35:00	123	84	67	67	56	8241
4	4	7/7/2016 11:00:00	141	93	71	65	70	9165
5	5	7/7/2016 11:32:00	132	88	68	66	64	8712
6	6	7/7/2016 11:57:00	118	84	67	73	51	8614
7	7	7/7/2016 12:31:00	111	73	59	75	52	8325
8	в	7/7/2016 1:08:00	109	73	57	75	52	8175
9	9	7/7/2016 1:40:00	105	65	50	74	55	7770
10	D	7/7/2016 2:05:00	108	73	54	76	54	8208
11	1	7/7/2016 2:36:00	100	69	54	72	46	7200
12	2	7/7/2016 3:08:00	100	70	55	72	45	7200
13	3	7/7/2016 3:36:00	116	87	70	87	46	10092
14	4	7/7/2016 4:06:00	92	66	53	80	39	7360
15	5	7/7/2016 4:32:00	115	87	68	80	47	9200
16	5	7/7/2016 4:57:00	109	73	58	80	51	8720
17	7	7/7/2016 5:25:00	112	80	64	76	48	8512
18	в	7/7/2016 5:56:00	102	72	56	74	46	7548
19	Э	7/7/2016 6:30:00	102	75	61	73	41	7446
20	С	7/7/2016 7:05:00	122	91	69	82	53	10004
21	1	7/7/2016 7:36:00	113	83	65	84	48	9492
22	2	7/7/2016 8:04:00	126	92	73	91	53	11466
23	3	7/7/2016 8:36:00	99	69	53	77	46	7623
24	4	7/7/2016 9:10:00	112	79	62	73	50	8176
25	5	7/7/2016 9:43:00	93	66	52	73	41	6789
26	5 D	7/7/2016 10:17:00	106	81	66	77	40	8162
27	7 D	7/7/2016 10:43:00	95	63	45	76	50	7220
28	в⊃	7/7/2016 11:18:00	97	64	45	73	52	7081
29	9 D	7/8/2016 12:13:00	98	66	48	70	50	6860
Eve	ent	7/8/2016 1:20:00		-		-		Error
30		7/8/2016 2:17:00	110	78	59	70	51	7700
31	1 2	7/8/2016 3:20:00	96	69	54	65	42	6240
32	2 D	7/8/2016 4:22:00	100	72	56	56	44	5600
33		7/8/2016 5:27:00	100	00	55	64	42	8064
34	4 2	7/8/2016 6:29:00	128	92	69	03	59	11160
35	ענ	7/8/2016 7:32:00	110	87	75	90	30	10304
30	7	7/8/2016 8:34:00	112	72	50	79	40	7722
37		110/2010 8.34.00	99	12	59	10	40	1122

Average	110 / 61 mmHg	112 / 62 mmHg	105 / 57 mmHg
SD	12.3 / 8.4 mmHg	12.1 / 7.8 mmHg	12.0 / 9.0 mmHg
Pulse Pressure	49.3 mmHg	49.5 mmHg	48.6 mmHg
and the second			
0			
Systolic:			
Nr. measurements	2 (5%) >= 130	1 (4%) >= 135	2 (20%) >= 120
Maximum	141 mmHg at 11:00	141 mmHg at 11:00	128 mmHg at 6:29
Minimum	92 mmHg at 16:06	92 mmHg at 16:06	95 mmHg at 22:43
			-
Diastolic:			
Nr. measurements	0 (0%) >= 80	0 (0%) >= 85	0 (0%) >= 70
Maximum	76 mmHg at 10:03	76 mmHg at 10:03	69 mmHg at 6:29
Minimum	45 mmHg at 22:43	50 mmHg at 13:40	45 mmHg at 22:43
Heart rate:			
Average	74 bom	76 hpm	70 bpm
SD	8.0 bpm	7.0 bpm	9.4 bpm
Maximum	92 bpm at 8:07	92 bpm at 8:07	90 bpm at 7:32
Minimum	56 bpm at 4:22	65 bpm at 10:03	56 bpm at 4:22
Awake/asleep decrease	, early morning:		
Decrease:	6.2% / 9.6% (Not a dipper	r)	
Morning average:	105.5 / 67.0 mmHg		

37 27 10 10:56:00 PM 1:06:00 PM 9:50:00 AM 110 / 61 mmHq 112 / 62 mmHq 105 / 57 mmHq
10:56:00 PM 1:06:00 PM 9:50:00 AM 110 / 61 mmHq 112 / 62 mmHq 105 / 57 mmHq
110 / 61 mmHa 112 / 62 mmHa 105 / 57 mmHa
12.3 / 8.4 mmHg 12.1 / 7.8 mmHg 12.0 / 9.0 mmH
49.3 mmHg 49.5 mmHg 48.6 mmHg

ABPM Documentation
 Measurements were done every 30 minutes in day time and every 60 minutes in night time. 97 % of the measurements are satisfactory. Total measurements: 37; Day time: 27 Night time: 10 Total time of recording 22 hours 59 minutes
 Average overall BP 110/61 mmHg (goal < 130/80)
 Average awake BP 112/62 mmHg (goal < 135/85)
 Average asleep BP 105/57 mmHg (goal < 120/70)
 Blood pressure decrease in sleep -6.2%, the patient is a non-dipper. (Normal dipping is between 10-20% drop of systolic blood pressure)
KAISER PERMANENTE.





Recommendation:

Patient's blood pressure profile of overall and daytime averages do NOT meet criteria of hypertension. Since blood pressure was elevated in clinic and normal during awake period of ambulatory measurement, patient likely has white coat syndrome.

If clinic blood pressure continues to be elevated, consider using automated office blood pressure monitor (AOBP) in the office, or patient's home BP monitor to assess her ambulatory blood pressure.

As patients with white coat syndrome may progress to true hypertension, consider retesting patient in a few years as clinically indicated.

Case 2 – Mrs. White 2 years later

- 77 year old woman referred for ABPM to "rule out white coat hypertension".
- BP Readings from Last 3 Encounters in clinic: 08/15/16 : 155/87 07/21/16 : 140/80 07/19/16 : 157/81

	Date & Time	Syst.	MAP	Diast.	HR	PP	RPP Comme
1	8/15/2016 4.29.00	162	109	79	68	83	11016 Manual
2	8/15/2016 4:54:00	158	113	88	80	70	12640
3	8/15/2016 5:26:00	157	108	78	71	79	11147
4	8/15/2016 5:51:00	159	109	77	78	82	12402
5	8/15/2016 6:23:00	164	106	75	68	89	11152
6	8/15/2016 6:48:00	154	109	80	84	74	12936
7	8/15/2016 7:22:00	145	94	69	88	76	12760
8	8/15/2016 7:54:00	140	89	68	84	72	11760
9	8/15/2016 8:26:00	128	96	76	83	52	10624
10	8/15/2016 8:51:00	124	89	66	83	58	10292
11	8/15/2016 9:22:00	110	82	66	77	44	8470
12	8/15/2016 9:54:00	128	84	60	75	68	9600
13 D	8/15/2016 10:22:00	122	80	59	76	63	9272
14 D	8/15/2016 11:18:00	128	91	69	78	59	9984
15 D	8/16/2016 12:13:00	118	72	46	62	72	7316
16 D	8/16/2016 1:14:00	126	94	69	63	57	7938
17 D	8/16/2016 2:18:00	155	98	69	67	86	10385
18 D	8/16/2016 3:23:00	142	93	64	63	78	8946
19 D	8/16/2016 4:24:00	134	88	65	91	69	12194
20 D	8/16/2016 5:22:00	138	92	64	71	74	9798
21 ⊅	8/16/2016 6:24:00	164	103	72	68	92	11152
22 D	8/16/2016 7:28:00	108	80	62	63	46	6804
23 D	8/16/2016 8:31:00	115	84	66	58	49	6670
24 D	8/16/2016 9:35:00	145	103	79	69	66	10005
25	8/16/2016 10:31:00	133	100	75	68	58	9044
20	8/16/2016 10:58:00	134	106	78	20	62	11858
20	8/16/2016 11:23:00	133	100	64	00	55	10040
20	8/16/2016 11:55.00	129	86	66	70	50	0750
29	8/16/2016 12:55:00	146	101	79	82	67	11890
31	8/16/2016 1:28:00	145	94	70	77	75	11165
32	8/16/2016 2:00:00	127	90	67	81	60	10287
33	8/16/2016 2:35:00	147	98	72	80	75	11760
34	8/16/2016 3:07:00	137	96	71	79	66	10823
35	8/16/2016 3:40:00	151	102	73	86	78	12986
36	8/16/2016 4:15:00	140	98	74	82	66	11480

	General	Overall:	Awake:	Asleen:
1	Nr. measurements	36	24	12
	Total time	11:46:00 PM	11:37:00 AM	12:09:00 PM
/	Average	139 / 70 mmHg	141 / 73 mmHg	133 / 65 mmHg
:	SD	15.4 / 7.8 mmHg	14.3 / 6.4 mmHg	16.7 / 8.0 mmHg
1	Pulse Pressure	68.2 mmHg	68.5 mmHg	67.6 mmHg
:	Systolic:			
	Nr. measurements	23 (64%) >= 130	15 (63%) >= 135	9 (75%) >= 120
	Maximum	164 mmHg at 18:23	164 mmHg at 18:23	164 mmHg at 6:24
1	Minimum	108 mmHg at 7:28	110 mmHg at 21:22	108 mmHg at 7:28
1	Diastolic:			
-	Nr. measurements	3 (8%) >= 80	1 (4%) >= 85	2 (17%) >= 70
1	Maximum	88 mmHg at 16:54	88 mmHg at 16:54	79 mmHg at 9:35
	Minimum	46 mmHg at 0:13	60 mmHg at 21:54	46 mmHg at 0:13
		-	-	-
	Heart rate:			
	Average	76 hpm	79 hom	69 ham
	SD	8 2 hnm	5 5 bom	9.0 hpm
	Maximum	91 hpm at 4:24	88 hnm at 19:22	91 hom at 4:24
	Minimum	58 hpm at 8:31	68 bpm at 16:29	58 bpm at 8:31
		56 bpm at 0.61	00 Bpin at 10.20	50 bpm at 0.01
	Awake/asleep decrease, early i	morning:		
	Decrease:	6.0% / 10.4% (Not a dipper)		

36 24 12 11:46:00 PM 11:37:00 AM 12:09:00 130 / 70 mmHz 141 / 73 mmHz 133 / 65	•
11:46:00 PM 11:37:00 AM 12:09:00 130 / 70 mmHz 141 / 73 mmHz 133 / 65	
120 / 70 mm Ha 141 / 72 mm Ha 123 / 65	9:00 PM
139770 mmmg 141773 mmmg 133703	/ 65 mmHg
15.4 / 7.8 mmHg 14.3 / 6.4 mmHg 16.7 / 8.4	/ 8.0 mmHg
68.2 mmHg 68.5 mmHg 67.6 mm	mmHg

Mrs.	White
------	-------

- 97 % of the measurements are satisfactory.
- Average overall BP **139/70** mmHg (goal < 130/80)
- Average awake BP **142/73** mmHg (goal < 135/85)
- Average asleep BP **133/65** mmHg (goal < 120/70)
- Blood pressure decrease in sleep -6%, the patient is a nondipper





IMPRESSION:

This is a valid study with more than 80% of expected recorded blood pressure being successful. Patient had elevated systolic blood pressure throughout the day, surpassing the recommended thresholds for overall, awake and asleep blood pressure averages. Patient's awake blood pressure is similar to office blood pressure, thus patient does not have white coat syndrome. Patient is a non-dipper, indicating higher cardiovascular risk profile.

RECOMMENDATION:

Patient met criteria for hypertension diagnosis and did not appear to have white coat syndrome. Recommending lifestyle adjustment and possibly medication for hypertension management.

CASE 3 – Mr. Zorro

Patient is a 43 year old male referred for ABPM

Readings from Last 3 Office Encounters: 05/7/18 : 134/84 04/14/18 : 138/92 04/2/18 : 126/80

Nr.	Date & Time	Syst.	MAP	Diast.	HR	PP	RPP	Comment
1	5/31/2018 9:49:00	147	125	107	76	40	11172	Manual mea
2	5/31/2018 10:00:00	155	132	113	76	42	11780	torancar mea
3	5/31/2018 10:30:00	153	127	105	75	48	11475	
4	5/31/2018 11:02:00	100	120	100	20	40	12060	
4	5/3//2018 11.03.00	102	102	106	30	50	12960	
5	5/31/2018 11:30:00	145	117	92	18	53	11310	
- 6	5/31/2018 12:00:00	148	125	105	82	43	12136	-
Event	5/31/2018 12:30:00							Error measu
7	5/31/2018 12:33:00	145	118	95	96	50	13920	
8 D	5/31/2018 1:00:00	119	95	74	73	45	8687	
9 D	5/31/2018 1:33:00	121	102	86	70	35	8470	
10 D	5/31/2018 2:00:00	122	98	77	70	45	8540	
11 D	5/31/2018 2:30:00	128	104	83	72	45	9216	
12 D	5/31/2018 3:00:00	134	107	84	71	50	9514	
Event	5/31/2018 3:30:00							Error measu
13 D	5/31/2018 3:33:00	170	141	117	78	53	13260	
14 7	5/31/2018 4:03:00	133	110	90	70	43	9310	
15 D	5/31/2018 4:30:00	147	119	95	75	52	11025	
16 7	5/31/2018 5:00:00	122	97	67	68	65	8076	
17 7	6/31/2018 5:30:00	120	105		76	46	0750	
10 5	5/31/2018 5:50:00	130	104	80	70	52	0210	
10 0	5/31/2018 6:00:00	133	119	100	74	40	10200	
19	5/31/2018 6.30.00	140	105	100	74	20	110300	
20	5/31/2018 7:00:00	145	125	109	10	30	11020	
21	5/31/2018 7:30:00	164	130	101	88	63	14432	
Event	5/31/2018 8:03:00							Error measu
Event	5/31/2018 8:33:00			and the second sec	Contractor of the second	1.00	and the second	Error measu
22	5/31/2018 9:00:00	148	122	100	81	48	11988	Second Second
Event	5/31/2018 9:30:00							Error measu
Event	5/31/2018 9:33:00							Error measu
Event	5/31/2018 10:03:00							Error measu
23	5/31/2018 10:30:00	140	119	101	86	39	12040	
24	5/31/2018 11:00:00	135	118	103	82	32	11070	
25	6/1/2018 12:00:01	132	117	105	77	27	10164	
26	6/1/2018 1:00:02	131	109	91	79	40	10349	
27	6/1/2018 2:00:03	134	112	93	70	41	9380	
28	6/1/2018 2:05:00	128	108	92	77	36	9856	Pressed eve
29	6/1/2018 3:00:00	135	117	101	70	34	9450	
30	6/1/2018 4:00:01	166	138	114	70	52	11620	
31	6/1/2018 4:01:00	150	135	445	70	44	12561	Manual mea
31	6/1/2018 4.01.00	135	110		80	42	0720	wanda mea
32	6/1/2018 5:00:00	180	107	50	142	71	19500	
33	6/1/2018 6:00:01	166	121	95	70	60	10592	
: 34	6/1/2018 7:00:02	148	121	98	18	50	11544	
35	6/1/2018 8:00:03	144	120	99	80	45	11520	
36	6/1/2018 8:30:00	164	135	111	80	53	13120	
37	6/1/2018 9:00:00	165	132	103	82	62	13530	
38	6/1/2018 9:30:00	153	127	104	84	49	12852	

General:	Overall	Awaka	
a diridi di.	OVBIEN.	AWake:	Asleep:
Nr. measurements	38	27	11
% Succeeded	84%	82%	92%
Total time -	23:41:00	18:11:00	05:30:00
Average	144 / 97 mmHg	148 / 102 mmHg	134 / 85 mmHg
SD	14.0 / 11.8 mmHg	11.7 / 6.8 mmHg	14.3 / 13.0 mmHg
Pulse Pressure	46.6 mmHg	45.8 mmHg	48.4 mmHg
Systolic			
cystolic.			1
Nr. measurements	33 (87%) >= 130	23 (85%) >= 135	10 (91%) >= 120
Maximum	170 mmHg at 15:33	166 mmHg at 4:00	170 mmHg at 15:33
Minimum	119 mmHg at 13:00	128 mmHg at 2:05	119 mmHg at 13:00
			1
Diastolic:			
Nr. measurements	35 (92%) >= 80	27 (100%) >= 85	10 (91%) >= 70
Maximum	117 mmHg at 15:33	115 mmHo at 4:01	117 mmHa at 15:33
Minimum	67 mmHg at 17:00	91 mmHo at 1:00	67 mmHa at 17:00
Heart rate;			
Austana	70 have	20 h	
en	/o upm	80 bpm	72 bpm
Maximum	112 hnm at 6:00	8.7 opm	3.0 bpm
Minimum	68 bpm at 17:00	60 have at 5:00	26 bpm at 15:33
	36 bpm #(17.00	op opinial 5.00	65 bpm at 17:00
Awake/asleep decrease,	early morning:		
Decrease:	9.7% / 16.5% (Not a dipp	er)	
Morning average:	149.7 / 103.3 mmHo		1

Overall:	Awake:	Asleep:
31	25	6
72%	71%	75%
23:25:00	17:55:03	05:29:57
162 / 109 mmHg	166 / 113 mmHg	143 / 92 mmHg
20.3 / 15.0 mmHg	19.2 / 12.7 mmHg	13.3 / 11.7 mmHg
52.4 mmHg	52.8 mmHg	50.7 mmHg

Mr. Zorro

- 84 % of the measurements are satisfactory
- Average overall BP **162/109** mmHg (goal < 130/80)
- Average awake BP **166/113** mmHg (goal < 135/85)
- Average asleep BP **143/92** mmHg (goal < 120/70)
- Blood pressure decrease in sleep -6%, the patient is a non-dipper. (Normal dipping is between 10-20% drop of systolic blood pressure)

Question Patient's blood pressure in clinic: 05/7/18 : 134/84 04/14/18 : 138/92 04/2/18 : 126/80 Patient's blood pressure on 24 hour monitor: Overall average blood pressure 162/109 mmHg Daytime average blood pressure 166/113 mmHg Nighttime average blood pressure 143/92 mmHg
Patient has:
A) Hypertension
B) White Coat Syndrome
C) Masked Hypertension



IMPRESSION:

This is a valid study being with more than 80% of expected recorded blood pressure being successful. Patient appears to have elevated systolic blood pressure in the range of 140-160s for most awake time. Pt has more than 85% of her systolic blood pressure above awake threshold and more than 91% of systolic blood pressure values above the asleep threshold. Patient's awake average blood pressure is elevated compared to a normal average office blood pressure, suggesting diagnosis of mask hypertension. Patient is a non-dipper, indicating higher cardiovascular risk profile.

RECOMMENDATION:

Patient's blood pressure readings are suggestive of masked hypertension, recommending behavior modification and medication treatment.





	га	tient s	ular	/	
Date			T		
Date	Lime	Symptoms/Mood	Activity	Medications Taken	
5:23	4:30 pm		Monitor applied		
0	6.20pm	stight matthe big	laying dawn on		
h.	6 . 45pm	4	String diaw n	Arta Suum	
v	8:00pm	97	11	Buladipines metocala)	
1	9:00 pm	*	went to bed	2001110 + aborrastation	
v	10:000m	onuphing +	sitting drawn		
L.	to: or pm	" T cos phung	usat to restrom		
- 13	10115 Pm		н -		
. P	11:45Pm	. 11	v		
5/24	1:00-314 20	welly threat	Sitting Janua		
5124	3:54 2	peloi behons	11 1		
61	5:30 pm	had load throbbing			
11	6:0000	η	sitter up	my-tochlecomiziel	
1	2:00 am	0		anlodiane	
4	7:05 am	-d	Jaidian	netlermin * 1	
-	8:00 on		loying douts .	tremont.	
	9:5500		1	ty lend.	
4	2:10 pm		Lav	tyland	
4	5. 40 am	V rannah at	Sitter Jain		

Nr.	Date & Time	Syst.	MAP	Diast.	HR
1	5/23/2018 4:13:00	150	117	01	70
2	5/23/2018 4:15:00	133	102	27	20
з	5/23/2018 4:30:00	126	96	71	76
4	5/23/2018 5:00:00	120	90	66	60
5	5/23/2018 5:30:00	177	106	00	00
6	5/23/2018 6:00:00	130	100	20	00
7	5/23/2018 6:30:00	131	90	11	65
8	5/23/2018 7:00:00	131	100	66	14
9	5/23/2018 7:30:00	131	100	15	68
10	5/23/2018 8:00:00	123	97	16	10
11 .	5/23/2018 0:00:01	130	97	70	71
12	5/23/2018 10:00:01	124	99	77	61
12	5/23/2018 10:00:02	122	98	78	82
10	5/23/2018 11:00:03	121	104	90	71
14	5/24/2018 12:00:04	108	80	56	65
15	5/24/2018 1:00:05	116	88	65	66
16	5/24/2018 2:00:06	111	79	52	67
17 2	5/24/2018 3:00:07	107	81	58	67
18	5/24/2018 4:00:08	146	113	86	85
19	5/24/2018 5:00:09	136	102	73	76
20	5/24/2018 6:00:10	139	107	79	88
21	5/24/2018 7:00:11	151	107	69	61
22	5/24/2018 7:30:00	125	95	69	64
23	5/24/2018 8:03:00	122	91	65	68
24	5/24/2018 8:30:00	104	77	54	65
25	5/24/2018 9:00:00	97	73	53	67
26	5/24/2018 9:30:00	140	106	76	77
27	5/24/2018 10:00:00	122	94	70	69
28	5/24/2018 10:30:00	103	77	55	66
29	5/24/2018 11:00:00	104	79	57	63
30	5/24/2018 11:30:00	121	95	72	66
31	5/24/2018 12:00:00	112	83	59	63
32	5/24/2018 12:30:00	133	108	88	96
33	5/24/2018 1:00:00	110	84	61	71
34	5/24/2018 1:30:00	158	117	82	92
35	5/24/2018 2:00:00	121	91	65	75
36	5/24/2018 2:30:00	134	92	56	73
37	5/24/2018 3:00:00	138	103	74	87
38	5/24/2018 3:33:00	101	83	68	54
Event	5/24/2018 4:03:00		00	00	54

Selleral.	Overall:	Awake:	Asleep:
Nr. measurements	38	30	8
% Succeeded	97%	97%	100%
Total time	23:20:00	15:19:52	08:00:08
Average	125 / 69 mmHg	126 / 69 mmHg	119 / 70 mmHa
SD	14.8 / 10.2 mmHg	15.2 / 9.0 mmHg	12.6 / 14.4 mmHg
Pulse Pressure	55.2 mmHg	56.8 mmHg	49.1 mmHg
Systolic:			
Nr. measurements	16 (42%) >= 130	8 (27%) >= 135	4 (50%) >= 120
Maximum	158 mmHg at 13:30	158 mmHg at 13:30	146 mmHg at 4:00
Minimum	97 mmHg at 9:00	97 mmHg at 9:00	107 mmHg at 3:00
Diastolic:			
Nr. measurements	6 (16%) >= 80	1 (3%) >= 85	4 (50%) >= 70
Maximum	90 mmHg at 23:00	88 mmHn at 12:30	90 mmHn at 23:00
Minimum	52 mmHg at 2:00	53 mmHg at 9:00	52 mmHg at 2:00
Heart rato:			
Average	72 bpm	72 bpm	71 bpm
SD	9.1 bpm	9.4 bpm	8.5 bpm
Maximum	96 bpm at 12:30	96 bpm at 12:30	85 bpm at 4:00
Minimum	54 bpm at 15:33	54 bpm at 15:33	61 bpm at 21:00

General:	Overall:	Awake:	Asleep:
Nr. measurements	38	30	8
% Succeeded	97%	97%	100%
Total time	23:20:00	15:19:52	08:00:08
Average	125 / 69 mmHg	126 / 69 mmHg	119 / 70 mmH
SD	14.8 / 10.2 mmHg	15.2 / 9.0 mmHg	12.6 / 14.4 mn
Pulse Pressure	55.2 mmHg	56.8 mmHg	49.1 mmHg
RECOMMENDATIO	N:		





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 Salles G, Reboldi G, Fagard R, et al. Prognostic Effect of the Nocturnal Blood Pressure Fall in Hypertensive Patients – The Ambulatory Blood Pressure Collaboration in Patients With Hypertension (ABC-H) Meta-Analysis. <i>Hypertension.</i> KAISER PERMANENTE. th2016;67:693-700.

Medical Center	AOBP	ABPM	
Antelope Valley	1	1	
Bakersfield	0	0	
Baldwin Park	6	6	
Downey	1 at each module	2	
Fontana	4	5	
Orange County	18	3	
Panorama City	6	4	
Riverside	2	4	
San Diego	14	6	
South Bay	1	1	
Sunset	5	2	
West LA	14	4	
Woodland Hills	10	2	







National Remote Pt Monitoring (RPM) Program Dr. Michael Swiernik

- SCAL and MAS were part of pilot programs started early 2017 SCAL for glucometer and MAS for BP monitoring
- New version being deployed to all regions
 - Deployed glucometer monitoring in CO (Feb), SCAL (June 26), soon in GA (September 17)
 - Deployed BP monitoring in MAS (March)
- BP monitoring for SCAL could be ready to deploy by Q4 2018, although realistically early 2019

KAISER PERMANENTE. thrive

High-level workflow

- Clinician enrolls patient
 - Sets patient goals and In Basket notifications
- Patient receives email and does enrollment

 Includes setting up account with vendor and consent
- Patient connects BP cuff to smartphone app and starts taking readings
- Readings come into KPHC for clinical review and documentation
- Patients can be unenrolled and re-enrolled if needed
- Required notifications can be handed off to another clinician

	KAISER PERMANENTE.	
	Welcome to Remote Monitoring.	
	HYPERTENSION	
	Clinical staff can enroll any member who needs glucose monitoring into this program. This program allows members to load their home blood sugar readings automatically into their electronic medical record via their smartphones.	
	Verify the Member has the following before proceeding:	
	Smartphone (iPhone/iPad or Android)	
	Email address to receive enrollment information	
	Omron 10 Series Wireless Blood Pressure Monitor	
	Good understanding of English	
KAISER PERMA	Must be 18+ years old	

STEP 1 OF 2 IN CLINICIAN ENROLLMENT	
RPM Program Conf	iguration
Member RPM Program Contact	Information
This contact information is used only for address at the time, Telehealth Support	the RPM program, and will not update in KPHC. If the Member does not know their email can contact them at the phone number below to retrieve after.
CELL PHONE NUMBER	
ex: (123) 456-7890	
EMAIL ADDRESS	
ex: member_name@email.com	RPM Clinical Goals
	 Clinical Goals help the Member understand the most important clinical targets during their participation in the RPM program. They are also shown to the other clinicians who may view the Member's RPM data to aid in clinical interpretation and decision making.
	The current Clinical Goal values are defaults created by your region's RPM program. They can be updated for this individual member's care here.
	1. Keep average systolic and diastolic blood pressure over 1 weeks < or = 120 / 85
	Image: Non- 2. Measure blood pressure 3 times a week.

RPM N	Notification Settings
Notifica notifica will alw	itions are used to alert Clinicians and/or Members when notable data or data trends are seen in the device readings. The tion options have been defined by your regional program. Some notifications may be set as required by the program, and ays be sent to the Reviewing Clinician, who is by default the Enrolling Clinician. Other notifications can be turned on and off.
All avai	able notifications can be updated if a different value is more appropriate to this Member.
Optiona	al Program Notifications
	If Systolic Blood Pressure is > 140 mmHg, then notify clinician by email every time • .
	IN ADDITION TO DATA RELEVANT FOR THE NOTIFICATION, THE FOLLOWING MESSAGE WILL BE SENT: take a look at this
OFF	If Systolic Blood Pressure is > 70 mmHg, then notify clinician by inbasket every time .
	IN ADDITION TO DATA RELEVANT FOR THE NOTIFICATION, THE FOLLOWING MESSAGE WILL BE SENT: Clinician HT by inbasket
OFF	If Systolic Blood Pressure is > 70 mmHg, then notify member by email every time .
	IN ADDITION TO DATA RELEVANT FOR THE NOTIFICATION, THE FOLLOWING MESSAGE WILL BE SENT:
	Member by Email HT

Remote Patient	Monitoring Data Over th	ree months]	
Summary Statistics		100% ALL GOALS SUCCESS RATE		
137/85 Average BP	136-138 mmHg Systolic BP Range	78-91 mmHg Diastolic BP Range	100% % in Systolic Goal	100% % in Diastolic Goal
Blood Pressure Readin	gs	View Time Serie	s • between	0 • and 24 •
SYSTOLIC BP O DIAST	OLIC BP OUT OF RANGE			
150 140 2 2 3 3 3 0 -	:			120
120	•			
0 90 - 0 80 - 70 -				
60 -	0			
50				

Questions to consider

- Clinical use case

 Diagnosis v. short-term monitoring v. long-term monitoring
- How to distribute blood pressure cuffs?
- Enrollment method virtual vs in-person
- In-person with assistance has much higher data upload % (~85-90%), vs. ~55% for email
- What do you want to trigger In Basket notifications?
 - E.g., single reading > 250/120, average readings > 180/100, no readings taken in > 1 week, etc.
 - Current triggers: <>= reading, <>= average, # of readings per day/week

