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Evidence Table 1: Summary of quality characteristics for articles addressing question #1a-c

Study (question)	Center	Funding	Adequate Description		Clinic BP Observer			Self BP Instructions Provided	Ambulatory BP Trained	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique			
Abe, 1987(a, b)	single	can't tell	N	Y	can't tell	N	N	can't tell	NA	Y
Aylett, 1999 (b)	multi	industry	Y	Y	can't tell	N	can't tell	Y	NA	N
Helmers, 2000 (c)	multi	govt	Y	Y	can't tell	Y	can't tell	NA	can't tell	Y
Hoegholm, 1999 (c)	multi	can't tell	Y	Y	N	Y	N	NA	can't tell	Y
Inden, 1998 (c)	single	can't tell	Y	Y	can't tell	N	can't tell	NA	Y	N
Ironson, 1989 (a)	single	govt	Y	Y	can't tell	N	Y	NA	can't tell	Y
Jula, 1999 (a)	single	can't tell	Y	Y	Y	Y	Y	Y	can't tell	Y
Khoury, 1992 (a)	single	can't tell	N	N	can't tell	Y	can't tell	NA	can't tell	Y
MacDonald, 1999 (c)	single	govt, other	Y	Y	can't tell	Y	Y	NA	can't tell	Y
Manning, 1999 (c)	single	can't tell	Y	Y	can't tell	Y	Y	NA	Y	Y
Martinez, 1999 (c)	multi	industry	Y	Y	Y	Y	Y	NA	Y	Y
Martinez, 2001 (c)	multi	govt, industry	Y	Y	can't tell	Y	Y	NA	Y	Y
Mengden, 1991 (a)	single	can't tell	N	N	can't tell	N	N	Y	NA	Y
Modesti, 1994 (a)	single	can't tell	Y	Y	can't tell	N	Y	NA	Y	Y
Myers, 1995a (c)	single	can't tell	N	Y	Y	N	Y	NA	can't tell	Y
Myers, 1995b (a)	single	can't tell	Y	Y	Y	Y	can't tell	NA	can't tell	Y
Narkiewicz, 1995 (a)	multi	can't tell	Y	Y	can't tell	N	Y	NA	Y	Y
Nielsen, 1986 (a)	can't tell	can't tell	N	N	can't tell	N	N	Y	NA	Y
Owens, 1999 (c)	single	other	N	N	can't tell	Y	Y	NA	Y	Y
Palatini, 1998 (c)	multi	can't tell	Y	Y	can't tell	N	Y	NA	Y	Y
Pierdomenico, 1995 (c)	single	can't tell	Y	Y	can't tell	N	Y	NA	Y	Y

Study (question)	Center	Funding	Adequate Description		Clinic BP Observer			Self BP Instructions Provided	Ambulatory BP Trained	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique			
Sega, 1994 (a)	multi	other	Y	N	can't tell	N	Y	Y	Y	Y
Staessen, 1999 (a)	multi	govt, industry	Y	Y	can't tell	N	can't tell	NA	can't tell	Y
Stergiou, 1998a (a)	single	can't tell	Y	Y	can't tell	N	Y	Y	Y	Y
Stergiou, 1998b (b, c)	single	can't tell	Y	Y	can't tell	N	Y	Y	can't tell	Y
Stergiou, 2000 (b, c)	single	can't tell	Y	Y	Y	Y	Y	can't tell	can't tell	Y
Thijs, 1996 (a)	multi	industry	Y	Y	can't tell	N	can't tell	NA	can't tell	Y
Tochikubo, 1999 (c)	single	can't tell	Y	Y	can't tell	Y	can't tell	NA	can't tell	Y
Verdecchia, 1992 (c)	single	can't tell	Y	Y	can't tell	Y	Y	NA	can't tell	Y
Verdecchia, 1995 (c)	multi	other	Y	Y	can't tell	N	can't tell	NA	can't tell	Y
Verdecchia, 1996 (c)	single	can't tell	Y	N	can't tell	N	Y	NA	Y	Y
Weisser, 1994 (a)	multi	can't tell	N	Y	can't tell	N	N	Y	NA	Y
Zachariah, 1988 (a)	can't tell	can't tell	N	Y	can't tell	N	Y	NA	can't tell	Y
Zachariah, 1991(a)	single	can't tell	N	N	can't tell	N	Y	NA	can't tell	Y
Zawadzka, 1998 (a, c)	can't tell	govt	N	N	can't tell	Y	can't tell	NA	Y	Y

Evidence Table 2: Summary of population characteristics for articles addressing question #1a-c

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Abe, 1987 (a,b)	100	hypertension clinic	hypertensives	anti-hypertensive medication; secondary hypertension	56		52 (8)	96	0
Aylett, 1999 (b)	660	general clinic	hypertensives; anti-hypertensive medication		42			100	100
Uncontrolled hypertensive	258							100	
Untreated hypertensive	236							100	
Helmers, 2000 (c)	194	can't tell	hypertensives	age < 20 and > 65; anti-hypertensive medication; active CHD/CVD	66			100	0
Hoegholm, 1999 (c)	566	general practitioners	hypertensives; normotensives	anti-hypertensive medication; diabetes; active CHD/CVD	47.5			7.4	0
Inden, 1998 (c)	232	hypertension clinic	hypertensives	anti-hypertensive medication	46.9			100	0
Ironson, 1989 (a)	119	can't tell		active CHD/CVD; dizzy spells; asthma	60.5	50.4	34.4 (5.4)		0
Jula, 1999 (a)	233	general clinic	age between 34 and 55; hypertensives	pregnancy; anti-hypertensive medication; diabetes; active CHD/CVD; valvular heart disease	58.4		46 (4.9)	100	0

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Khoury, 1992 (a)	131	general clinic	clinic DBP 90 -115mmHg		52.7	0	53.9	100	
Women	62				0	0	60.2		
Men	69				100	0	50.2		
Age >65	39					0	75.5		
Age <65	92					0	46.3		
MacDonald, 1999 (c)	103	hypertension clinic	age >17; hypertensives; at least 2 BP meds	active CHD/CVD; LVH or target organ damage	53.4		59.4	100	100
Women	48				0		61.1	100	100
Men	55				100		58.4	100	100
Manning, 1999 (c)	186	hypertension clinic	hypertensives	anti-hypertensive medication	51.1		46	100	0
Martinez, 1999 (c)	345	general clinic	age between 18 and 75; hypertensives; Caucasians	normotensives; anti-hypertensive medication; target organ damage; valvular disease	47.8	0	51.8 (10.6)	100	0
Men	165				100	0		100	0
Women	180					0		100	0

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Martinez, 2001 (c)	223	general clinic	hypertensives	age <18 and >75; normotensives; anti-hypertensive medication; diabetes; chronic renal insufficiency; renal transplant active CHD/CVD	49.8		53 (11)	100	0
Mengden, 1991 (a)	127	BP Screening	hypertensives; normotensives	anti-hypertensive medication	62.2		42.7 (11.2)		0
Modesti, 1994 (a)	139	general population	no specific population	hypertensives; anti-hypertensive medication	61.9		38.7 (9.8)	0	
Myers, 1995a (c)	152	hypertension clinic	hypertensives; anti-hypertensive medication	can't tell	42.8				100
Men	65				100		55 (1)		100
Women	87				0		64 (1)		100
Myers, 1995b (a)	147	primary care practice	hypertensives; anti-hypertensive medication	age <21 and > 80; dialysis; chronic renal insufficiency; renal transplant; active CHD/CVD	38.1		64	100	100
Men	56				100				
Women	91				0				
Narkiewicz, 1995 (a)	411	can't tell	borderline /mild hypertension diastolic 90-99;	age <18 and >45; anti-hypertensive medication; BMI>30% of ideal	100		33.7 (8.5)	100	0
Nielsen, 1986 (a)	122	can't tell					47.5		

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Owens, 1999 (c)	1350	hypertension clinic	hypertensives	anti-hypertensive medication	43.4		50.9 (12.4)	100	569
Palatini, 1998 (c)	660	can't tell	age between 18 and 45; white coat hypertensives	anti-hypertensive medication	74.4		33 (9.0)	85.6	0
Pierdomenico, 1995 (c)	255	hypertension clinic	hypertensives	normotensives; anti-hypertensive medication; active CHD/CVD; secondary hypertension; valvular disease; diabetes; renal insufficiency	51.4		49 (14)	100	0
Sega, 1994 (a)	1651	general population	age between 25 and 64						
Staessen, 1999 (a)	808	can't tell	age >60; hypertensives	chronic renal insufficiency;	38.5		69.6 (6.2)		42.6
Stergiou, 1998a (a)	189	hypertension clinic	hypertensives	DBP >120mmHg, SBP >220mmHg; change in medication	56.6			100	41.8
Stergiou, 1998b (b, c)	189	hypertension clinic	hypertensives	DBP>120mmHg, SBP>220mmHg; change in HTN meds	56.6		52.2 (11.5)	100	41.8
Stergiou, 2000 (b, c)	133	hypertension clinic	hypertensives	anti-hypertensive medication; diabetes; dialysis; chronic renal insufficiency; active CHD/CVD; LVH by EKG; clinic BP > 200/115 mmHG	54.9		48.4 (10.2)	70.7	0

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Thijs, 1996 (a)	477	Syst-Eur trial	age>59	active CHD/CVD; secondary hypertension; liver disease, cancer	38.8			100	
Men	292				100				
Women	185				0				
Tochikubo, 1999 (c)	172	can't tell	age between 29 and 76; hypertensives	normotensives; anti-hypertensive medication; active CHD/CVD; anemia; renal disease; valvular disease	51.2				0
Verdecchia, 1992 (c)	260	can't tell	hypertensives	normotensives; anti-hypertensive medication; chronic renal insufficiency; active CHD/CVD	45.4			100	0
Women	142				0		55.4		0
Men	118				100		54.9		0
Verdecchia, 1995 (c)	1414	can't tell		congestive heart failure; valvular disease	44.8		50	87.4	
Verdecchia, 1996 (c)	83	can't tell	white coat hypertensives	hypertensives; medication; CHD/CVD; secondary hypertension; concomitant disease			44.3 (12)	100	0
Weisser, 1994 (a)	503	general population	no specific population	anti-hypertensive medication; serious illness; arm circumference >35cm	52.7		46.5 (12.9)		0

Study (question)	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Men	265				100		46.1		800
Women	238				0		46.9		0
Zachariah, 1988 (a)	168	can't tell	hypertensives	normotensives; anti-hypertensive medication	69.1		51 (9)	79.2	
Zachariah, 1991(a)	126	general clinic	normotensives	hypertensives; active CHD/CVD;	44.4			0	
Zawadzka, 1998 (a, c))	410	can't tell	hypertensives	normotensives; anti-hypertensive medication				100	

Evidence Table 3: Summary of clinic measurement for articles addressing question #1a-c

Study (question)	Device Type	Observer	Position	Measurements (Number)		
				Per Day	Days	Total
Abe, 1987 (a, b)	mercury	physician	sitting	1	3	3
Aylett, 1999 (b)	can't tell	can't tell	can't tell	can't tell		
Helmers, 2000 (c)	can't tell	can't tell	sitting	1	3	3
Hoegholm, 1999 (c)	multiple devices	physician	sitting	3		
Inden, 1998 (c)	mercury	can't tell	sitting	2	3	6
Ironson, 1989 (a)	mercury	can't tell	sitting	2	2	4
Jula, 1999 (a)	mercury	nurse	sitting	2	4	8
Khoury, 1992 (a)	can't tell	nurse	sitting	can't tell		
MacDonald, 1999 (c)	can't tell	nurse	supine	can't tell		
Manning, 1999 (c)	mercury	can't tell	combination	3	3	9
Martinez, 1999 (c)	mercury	nurse, physician	sitting	2	3	6
Martinez, 2001 (c)	mercury	physician	sitting	2	3	6
Mengden, 1991 (a)	aneroid	can't tell	can't tell	1	2	2
Modesti, 1994 (a)	mercury	physician	sitting	1	2	2
Myers, 1995a (c)	mercury	med tech, nurse, physician	combination	2	2	4
Myers, 1995b (a)	mercury	nurse	sitting	3	2	6
Narkiewicz, 1995 (a)	can't tell	can't tell	supine	3	2	6
Nielsen, 1986 (a)	automated	physician	can't tell	3	2	6
Owens, 1999 (c)	can't tell	nurse, physician	sitting	1	2	2
Palatini, 1998 (c)	can't tell	can't tell	supine	3	2	6
Pierdomenico, 1995 (c)	can't tell	can't tell	sitting	3	3	9
Staessen, 1999 (a)	can't tell	can't tell	combination	2	3	6
Stergiou, 1998a (a)	mercury	physician	sitting	2	2	4

Study (question)	Device Type	Observer	Position	Measurements (Number)		
				Per Day	Days	Total
Stergiou, 1998b (b, c)	mercury	physician	sitting	3	2	6
Thijs, 1996 (a)	can't tell	can't tell	sitting	2	3	6
Tochikubo, 1999 (c)	mercury	can't tell	can't tell	3	3	9
Verdecchia, 1995 (c)	can't tell	can't tell	can't tell	can't tell		
Verdecchia, 1996 (c)	mercury	physician	sitting	1	3	3
Weisser, 1994 (a)	automated	physician	sitting	2	2	4
Zachariah, 1988 (a)	mercury	med tech	combination	6	2	12
Zachariah, 1991 (a)	mercury	med tech	combination	6	2	12
Zawadzka, 1991 (a, c))	can't tell	nurse, physician	can't tell	1	3	3

Evidence Table 4: Summary of self measurement for articles addressing question #1a-c

Study	Device			Observer	Time of Recordings[a]			Measurements (Number)		
	Type	Name	Validated		morning	afternoon	evening	Per day	Days	Total
Abe, 1987 (a, b)	electronic or automated	can't tell	unknown	can't tell	Y	Y	Y	2	7	14
Aylett, 1999 (b)	electronic or automated	Omron 705c	Y	patient	can't tell	can't tell	can't tell	can't tell		14
Jula, 1999 (a)	electronic or automated	Omron 705c	Y	patient	Y	N	Y	4	7	28
Mengden, 1991 (a)	aneroid	Sysditon	unknown	patient	Y	N	Y	2	6	12
Nielsen, 1986 (a)	electronic or automated	TM 101	unknown	patient	Y	Y	Y	3	7	21
Sega, 1994 (a)	electronic or automated	HP 5331	unknown	patient	Y	N	Y	1	2	2
Stergiou, 1998a (a)	electronic or automated	Omron 705c	Y	patient	Y	N	Y	4	6	22.8
Stergiou, 1998b (b, c)	electronic or automated	Omron 705c	Y	patient	Y	N	Y	4	6	24
Stergiou, 2000 (b, c)	electronic or automated	Omron 705c	Y	can't tell	Y	N	Y	4	5	20
Weisser, 1994 (a)	electronic or automated	OM 1	unknown	patient	Y	N	Y	2	14	26.7

[a] morning = before noon, afternoon = noon to 6:00pm, evening = after 6:00pm

Evidence Table 5: Summary of ambulatory measurement for articles addressing question #1a-c

Study (question)	Device			Daytime		Nighttime	
	Type	Name	Validated	Definition	Time Interval (mins)	Definition	Time Interval (mins)
Helmers, 2000 (c)	oscillometric	SpaceLabs 90207	Y	7:00am -11:00pm	15	11:00pm - 7:00am	60
Hoegholm, 1999 (c)	oscillometric oscillometric	TM-2420, Model 7 TM-2420, Model 6	Y Y	8:00am - 9:59pm	15	12:00am - 5:59am	30
Inden, 1998 (c)	unknown	Nikon Colin 630	N	7:00am -11:30pm	30	11:00pm - 6:30am	30
Ironson, 1989 (a)	oscillometric	SpaceLabs not specified	unknown	9:00am - 11:00pm	20	can't tell	
Jula, 1999 (a)	auscultatory	Accutracker II	N	6:00pm - 11:00am	15	11:00pm - 6:00am	30
Khoury, 1992 (a)	oscillometric	SpaceLabs 90207	Y	7:00am - 11:00pm	11	11:00pm - 7:00am	60
MacDonald, 1999 (c)	oscillometric	SpaceLabs 90207	Y	8:00am - 10:00pm	20	10:00pm - 8:00pm	60
Manning, 1999 (c)	unknown	Medilog ABP	N	patient reported	30	patient reported	30
Martinez, 1999 (c)	oscillometric	SpaceLabs 90207	Y	10:00am - 8:00pm	15	12:00pm - 6:00am	15
Martinez, 2001 (c)	oscillometric	SpaceLabs 90207	Y	10:00am - 8:00am	15	12:00am - 6:00am	30
Modesti, 1994 (a)	oscillometric	SpaceLabs 90207	Y	7:01am - 10:00pm	15	10:01pm - 7:01am	15
Myers, 1995a (c)	oscillometric oscillometric unknown	SpaceLabs 90202 SpaceLabs 90207 SpaceLabs 5200	Y Y unknown	can't tell	can't tell	can't tell	can't tell
Myers, 1995b (a)	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	can't tell	15	not measured	
Narkiewicz, 1995 (a)	oscillometric oscillometric	SpaceLabs 90207 TM-2420, Model 7	Y Y	6:00am - 11:00pm	10	11:00pm - 6:00am	30
Owens, 1999 (c)	oscillometric	SpaceLabs 90207	Y	9:00am - 9:00pm	30	9:01pm - 12:59am	30
Palatini, 1998 (c)	oscillometric auscultatory	SpaceLabs 90207 TM 2420, Model 7	Y Y	6:00am - 11:00pm	10	11:00pm - 6:00am	30
Pierdomenico, 1995 (c)	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	6:00am - 12:00pm	15	12:00pm - 6:00am	30
Sega, 1994 (a)	oscillometric	SpaceLabs 90207	Y	7:00am - 11:00pm	20	11:00pm - 7:00am	20

Study (question)	Device			Daytime		Nighttime	
	Type	Name	Validated	Definition	Time Interval (mins)	Definition	Time Interval (mins)
Staessen, 1999 (a)	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y	10:00am - 8:00pm	30	12:00am - 6:00am	30
Stergiou, 1998a (a)	oscillometric	SpaceLabs 90207	Y	patient reported	20	patient reported	20
Stergiou, 1998b (b, c)	oscillometric	SpaceLabs 90207	Y	patient reported	20	patient reported	20
Stergiou, 2000 (b, c)	oscillometric	SpaceLabs 90207	Y	can't tell	20	can't tell	20
Thijs, 1996 (a)	oscillometric oscillometric unknown	SpaceLabs 90202 SpaceLabs 90207 Plus other unspecified	Y Y unknown	10:00am - 8:00pm	30	12:00am - 6:00am	30
Tochikubo, 1999 (c)	unknown	TM-2425	unknown	patient reported	30	patient reported	30
Verdecchia, 1992 (c)	oscillometric oscillometric unknown	SpaceLabs 90202 SpaceLabs 90207 SpaceLabs 5200	Y Y unknown	6:00am - 10:00pm	15		15
Verdecchia, 1995 (c)	oscillometric oscillometric unknown	SpaceLabs 90202 SpaceLabs 90207 SpaceLabs 5200	Y Y unknown	6:00am - 10:00pm	15	10:00pm - 6:00am	15
Verdecchia, 1996 (c)	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	6:00am - 10:00pm	15	10:00pm - 6:00am	15
Zachariah, 1988 (a)	unknown	Pressurometer III	unknown	can't tell	7.5	can't tell	15
Zachariah, 1991 (a)	unknown	Pressurometer	unknown	can't tell	7.5	can't tell	15
Zawadzka, 1998 (a, c)	auscultatory	TM 2420	unknown	can't tell	30	not measured	

Evidence Table 6: Distribution of readings between clinic and self-measured blood pressure (question #1a)

Study	N	Mean (SD) Systolic BP		Systolic Difference		Mean (SD) Diastolic BP		Diastolic Difference	
		Clinic	SMBP	Mean (SD)	P-value	Clinic	SMBP	Mean (SD)	P-value
Abe, 1987	100	165.5 (20.6)	147.8 (15.9)	17.7	<0.001	101.2 (10.1)	94.9 (10.8)	6.3	<0.001
Jula, 1999	233	144.5 (12.6)	138.9 (13.1)	5.6 (8.8)	<0.001	94.5 (7.4)	92.9 (8.6)	1.7 (6.5)	<0.001
Mengden, 1991	127	131.3 (18.9)	125.9 (15.5)	5.4	<0.01	85.6 (13.3)	84.1 (11)	1.5	<0.01
Nielsen, 1986	122			13	>0.05			5	>0.05
Stergiou, 1998b	189	142.9 (16.3)	137.5 (16.2)	5.4	<0.001	91.2 (9.9)	85.9 (9.9)	5.3	<0.001
Weisser, 1994	503	130 (16.5)	123.1 (14.6)	6.9	<0.01	82.1 (11.1)	77.6 (10.7)	4.5	<0.01
Women	238	126.4 (17.2)	118.9 (16.1)	7.5	<0.01	79.3 (11.2)	74.4 (11.1)	4.9	<0.01
Men	265	133.4 (15.1)	126.9 (12)	6.5	<0.01	84.7 (10.3)	80.5 (9.7)	4.2	<0.01

Evidence Table 7: Distribution of readings between clinic blood pressure and ambulatory blood pressure measurement, systolic (question #1a)

Study	N	Mean (SD) mmHG				Difference (SD) from clinic					
		Clinic	Daytime	Nighttime	24hr	Daytime	P-value	Nighttime	P-value	24hr	P-value
Ironson, 1989	119	126 (17.2)	121 (18.4)			5	<0.001				
Jula, 1999	233	144.5 (12.6)	148.3 (13.9)	125.5 (16.4)	141.7 (14)	-3.8 (9.9)	<0.001	19		2.8	
Khoury, 1992	131	155.4			138.4					17	<0.001
Women	62	160			137.8					22.2	<0.05[a]
Men	69	151.2			138.8					12.4	<0.05[a]
Age <65	92	150.9			135.3					15.6	<0.05[a]
Age >65	39	164.8			145					19.8	<0.05[a]
Modesti, 1994	139	129 (16)	120 (11)	107 (12)	117 (11)	9	<0.001	22	<0.001	12	<0.001
Myers, 1995b	147	137	132			14	<0.001				
Narkiewicz, 1995	411	146.1 (10.4)	134.9 (11)	117.7 (11.4)		11.2 (12.9)					
Staessen, 1999	808	173.3 (10.8)	151.4 (16.2)	134 (18.6)	145.8 (15.6)	21.9	<0.001				
Stergiou, 1998b	189	142.9 (16.3)	136 (14.3)	119 (13.3)	129.8 (13.2)	6.9	<0.001	23.9	<0.001	13.1	<0.001
Thijs, 1996	477	174 (12)	153	136	148	21	<0.001				
Women	292	175	153 (17)	134 (19)	147 (16)	22 (8)	<0.05[a]				
Men	185	174	154 (16)	139 (18)	149 (15)	19 (8)	<0.05[a]				
Zachariah, 1991	126	118 (13)			125					-7(7)	<0.001
Zachariah, 1988	168	149 (14)	145 (16)		141 (16)	4	<0.001			8	<0.001
Zawadzka, 1998	410	168.4 (21.8)				11.5 (13.4)					

[a] P-value determine by standard error or standard deviation of two groups

Evidence Table 8: Distribution of readings between clinic and ambulatory blood pressure, diastolic (question #1a)

Study	N	Mean (SD) mmHg				Difference (SD) from clinic					
		Clinic	Daytime	Nighttime	24hr	Daytime	P-value	Nighttime	P-value	24hr	P-value
Ironson, 1989	119	83 (12.4)	80 (14.4)			3	<0.001				
Jula, 1999	233	94.5 (7.4)	91.9 (7.8)	75.6 (8.9)	87.2 (7.6)	2.7 (6.8)	<0.001	18.9		7.3	
Khoury, 1992	131	93.1			85.4					7.7	<0.0001
Women	62	92.9			83.2						<0.05[a]
Men	69	93.2			87.3						<0.05[a]
Age <65	92	94			85.4						<0.05[a]
Age >65	39	90.8			85.4					5.4	<0.05[a]
Modesti, 1994	139	85 (11)	75 (8)	63 (11)	71 (8)	10	<0.001	22	<0.001	14	<0.001
Myers, 1995b	147	78	78								
Narkiewicz, 1995	411	95.6 (3.7)	83.8 (8.2)	73.4 (8.3)		11.8 (8.1)					
Staessen, 1999	808	86 (5.8)	84.1 (9.8)	70.2 (10.1)	79.3 (8.9)	1.9	<0.001				
Stergiou, 1998b	189	91.2 (9.9)	86.8 (11.1)	71.4 (10.1)	71.4 (10.1)	4.4	<0.001	19.8	<0.001	10.2	<0.001
Thijs, 1996	477	86 (6)	85	71	80	1	> 0.05				
Women	292	86	84 (10)	69 (11)	79 (10)						
Men	185	86	86 (9)	73 (10)	81 (8)						
Zachariah, 1988	168	99 (6)	96 (7)		93 (7)	3	<0.001			6	<0.001
Zachariah, 1991	126	75 (7)			72					3 (6)	<0.0001
Zawadzka, 1998	410	106.8 (10.1)				5.8 (8.5)					

[a] P-value determined by standard error or standard deviation of groups

Evidence Table 9: Distribution of readings between self-measured blood pressure and ambulatory blood pressure measurement, systolic (question #1a)

Study	N	Mean (SD) mmHg				Difference (SD) from self					
		Self	Daytime	Nighttime	24hr	Daytime	P-value	Nighttime	P-value	24hr	P-value
Sega, 1994	1651	119			118					1	<0.01
Stergiou, 1998b	189	137.5 (16.2)	136 (14.3)	119 (13.3)	129.8 (13.2)	1.5	>0.05	18.5	<0.001	7.7	<0.001
Stergiou, 2000	133	138.7 (15.6)	139.3 (12.8)			-0.6 (11.8)	>0.05				

Evidence Table 10: Distribution between self-measured blood pressure and ambulatory blood pressure measurement, diastolic (question #1a)

Study	N	Mean (SD) mmHg				Difference (SD) from self					
		Self	Daytime	Nighttime	24hr	Daytime	P-value	Nighttime	P-value	24hr	P-value
Sega, 1994	1651	75			74					1	<0.01
Stergiou, 1998a	189	85.9 (9.9)	86.8 (11.1)	71.4 (10.1)	81.0 (10.4)	-0.9 (7)	>0.05	14.5	<0.001	4.9	<0.001
Stergiou, 2000	133	89.3 (8.6)	91.1 (9.9)			-1.8 (6.7)	>0.05				

Evidence Table 11: Prevalence of white coat hypertension by self-measured blood pressure (question #1b)

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	SMBP	
Abe, 1987	100	Hypertension was defined by 1962 WHO classification	Hypertension was defined by 1962 WHO classification	17
Aylett, 1999	660	All participants with clinic hypertension (defined as SBP ≥ 160 and DBP ≥ 100 mmHg)	WCH present if mean SMBP < 150 / 85 mmHg	16.5
Uncontrolled hypertensive	424			17
Untreated hypertensive	236			27
Stergiou, 1998a	189		WCH present if difference between clinic and mean self SBP > 20 mmHg or self DBP> 10 mmHg	25.9
Stergiou, 2000	133	All participants with clinic hypertension defined by A) SBP ≥ 140 <u>and</u> DBP ≥ 90 mmHg B) SBP/DBP ≥135/85 mmHg	A) WCH present if mean self BP ≤ 140 / 90 mmHg B) WCH present if mean self BP ≤ 135 / 85 mmHg	A) 33 B) 13

Evidence Table 12: Prevalence of white coat hypertension by ambulatory blood pressure (question #1c)

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
Helmers, 2000	194	All participants with clinic hypertension (defined as DBP ≥ 90 and ≤ 105 mmHg)	WCH present if mean **daytime** ambulatory DBP ≤ 85 mmHg	21.6
Men	128			14.84
Women	66			34.84
Hoeglholm, 1999	269	All participants with clinic hypertension (defined as DBP ≥ 90 mmHg)	WCH present if mean **daytime** ambulatory BP < 135 / 90 mmHg	18.1
Men	269			11.6
Women	297			23.8
Inden, 1998	232	All participants with clinic hypertension (defined as SBP ≥ 140 or DBP ≥ 90 mmHg)	A) WCH present if mean **24-hour** ambulatory SBP <135 mmHg and DBP < 85 mmHg B) WCH present if mean **daytime** ambulatory SBP< 120 mmHg and DBP < 75 mmHg	A) 13 B)19

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
MacDonald, 1999	103	All participants with clinic hypertension (defined as SBP > 140 to <200 mmHg or DBP > 90 to <120 mmHg)	WCH present if mean **daytime** ambulatory SBP< 140 mmHg and DBP < 90 mmHg or "if the systolic/diastolic pressure was at least 20/15 mmHg. (Both) lower than the clinic reading".	36
Men	55			20
Women	48			54
Manning, 1999.	186	All participants with clinic hypertension (defined as SBP ≥ 140/ 90 mmHg)	WCH present if mean **daytime** ambulatory SBP ≤ 136/86 mmHg	23
Men	95			10.2
Women	91			12.4
Martinez, 1998	345	All participants with clinic hypertension (defined as SBP > 140 and < 179 mmHg or DBP > 90 and 109 mmHg)	A) WCH present if mean **daytime (10 am - 8 pm)** ambulatory SBP < 135 mmHg and DBP < 85 mmHg B) WCH present if mean **daytime (9am - 10 pm)** ambulatory SBP <131 / 86 mmHg (women) and < 136/87 mmHg (men)	A) 39 B) 35
Men	165			A) 31
Women	180			A) 47

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
Martinez, 2001	223	All participants with clinic hypertension (defined as SBP > 140 to < 159 or DBP > 90 to < 99 mmHg)	Men: WCH present if mean daytime ambulatory SBP < 135 mmHg and DBP < 86 mmHg Women: WCH present if mean daytime ambulatory SBP <130 mmHg and DBP < 85 mmHg	32.3
Myers, 1995a	152		A) WCH present if difference between clinic and mean **daytime** ambulatory SBP > 20 mmHg or ambulatory DBP > 10 mmHg) B) Severe WCH present if difference between clinic mean **daytime** ambulatory SBP > 40 mmHg or DBP > 20 mmHg)	A) 67.1 B)32.2
Men	65		A. WCH B. Severe WCH	A) 55.4 B) 12.3
Women	87		A. WCH B. Severe WCH	A) 80.5 B) 47.1
Owens, 1999	1350	All participants with clinic hypertension (defined as SBP ≥ 140 mmHg and DBP ≥ 90 mmHg)	WCH present if mean **daytime** ambulatory BP ≤ 135 / 85 mmHg	11

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
Pierdomenico, 1995	255	All participants with clinic hypertension (defined as SBP > 140 or DBP> 90 mmHg)	WCH considered present if: A) **24-hour** ambulatory SBP< 135 mmHg and DBP< 85 mmHg B) **Daytime** ambulatory SBP< 134 mmHg and DBP< 90 mmHg C) **Daytime** ambulatory SBP<136 mmHg and DBP< 90 mmHg D) **Daytime** ambulatory SBP < 146 mmHg and DBP < 91 mmHg	A) 21 B) 18.4 C) 19.2 D) 22.7
Stergiou, 1998a	189		WCH present if difference between clinic and mean **daytime** ambulatory SBP > 20 mmHg or ambulatory DBP> 10 mmHg)	25.9

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
Stergiou, 2000	133	All participants with clinic hypertension defined as: A) SBP ≥ 140 mmHg or DBP ≥ 90 mmHg B) BP ≥ 135/85 mmHg	A) WCH present if mean **daytime** ambulatory BP ≤ 140 / 90 mmHg B) WCH present if mean **daytime** ambulatory BP ≤ 135 / 85 mmHg	A) 24 B) 11
Tochikubo, 1998	172	All participants with clinic hypertension (defined as SBP > 140 mmHg or DBP > 90 mmHg)	WCH present if mean **24- hour** ambulatory SBP< 133 mmHg and DBP < 82 mmHg	22
Verdecchia, 1992	260	All participants with clinic hypertension (defined as DBP > 90 or SBP> 160 mmHg)	WCH considered present if the mean **daytime** ambulatory SBP < 134 mmHg and DBP <88 mmHg	11.9
Men	118			11
Women	142			12.7
Verdecchia, 1995	1414	All participants with clinic hypertension (defined as SBP ≥ 140 or DBP ≥ 90 mmHg)	Men: WCH present if mean **daytime** ambulatory SBP< 136 mmHg and DBP < 87 mmHg Women: WCH present if mean **daytime** ambulatory SBP<131 mmHg and DBP < 86 mmHg	18.9

Study	N	Definition of Hypertension		Prevalence WCH (%)
		Clinic	ABP	
Zawadzka, 1998	410	All participants with clinic hypertension (defined as DBP ≥90 mmHg)	WCH present if mean **daytime** ambulatory DBP ≤ 90 mmHg	30.2

Evidence Table 13: Reproducibility of white coat hypertension (WCH) (question #1c)

Study	N	Interval between Assessments	Definition of Hypertension		Prevalence of WCH[a]	
			Clinic	Ambulatory	Initial N (%)	Repeat N (%)
Palatini, 1998	565	3 months	Clinic SBP 140-159 mmHg and/or DBP 90-99mmHg	WCH present if ABP: < 130/80mmHg	90 (100)	38 (42)
Verdecchia, 1996	83	2.5 years	Clinic SBP ≥ 140 and/or DBP ≥ 90 mmHg	WHC present if ABP: women < 131/86 mmHg men: < 136/87 mmHg	83 (100)	52 (63)

[a] WCH defined by hypertension by clinic BP, non-hypertension by ambulatory BP

Evidence Table 14: Summary of quality characteristics for articles addressing question #2

Study	Centers	Funding	Adequate Description		Clinic BP Observer			Self BP Instructions Provided	Ambulatory BP Trained	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique			
Jula, 1999	single	can't tell	Y	Y	Y	Y	Y	Y	can't tell	Y

Evidence Table 15: Summary of population characteristics for articles addressing question #2

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Jula, 1999	233	general clinic	age between 34 and 55; hypertensives	pregnancy; anti-hypertensive medication; diabetes; active CHD/CVD; valvular heart disease	58.4		46 (4.9)	100	0

Evidence Table 16: Summary of clinic measurements for articles addressing question #2

Study	Device Type	Observer	Position	Measurements (number)		
				Per Day	Days	Total
Jula, 1999	mercury	nurse	sitting	2	4	8

Evidence Table 17: Summary of self measurement for articles addressing question #2

Study	Device			Observer	Time of Recordings[a]			Measurements (Number)		
	Type	Name	Validated		Morning	Afternoon	Evening	Per day	Days	Total
Jula, 1999	electronic or automated	Omron 705c	Y	patient	Y	N	Y	4	7	28

[a] morning = before noon, afternoon = noon to 6:00pm, evening=after 6:00pm

Evidence Table 18: Characteristics of measures of left ventricular mass (question #2)

Study	Left ventricular mass		Left ventricular hypertrophy	
	Units	Mean (SD)	Criteria	Prevalence (%)
Jula, 1999	LV mass by surface area (g/m^2)	111 (2.5)	unknown	unknown

Evidence Table 19: Correlation of clinic and self-measured blood pressure with left ventricular mass (question #2)

Study	Systolic BP		Diastolic BP		Adjustment factors
	Clinic	Self	Clinic	Self	
Jula, 1999	0.4 (<0.001)	0.47 (<0.001)	0.37 (<0.001)	0.44 (<0.001)	unadjusted

Evidence Table 20: Characteristics of albuminuria measurement (question #2)

Study	Measurement	Collection Period	Mean (SD)	Criteria	Prevalence (%)
Jula, 1999	mg/24hrs	24 hours	25.7 (39.3)	NA	NA

Evidence Table 21: Correlation of clinic and self-measured blood pressure with albuminuria (question #2)

Study	Systolic BP		Diastolic BP		Adjustment factors
	Clinic (P-value)	Self (P-value)	Clinic (P-value)	Self (P-value)	
Jula, 1999	0.34 (<0.001)	0.32 (<0.001)	0.25 (<0.001)	0.28 (<0.001)	unadjusted

Evidence Table 22: Summary of quality characteristics for prospective studies addressing question #2 (question #2b)

Study	Centers	Funding	Adequate description		Clinic BP Observer			Self BP Instructions Provided	Blinded Outcome Assessment	Followup data for ≥80%	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique				
Ohkubo, 1998	single	govt, other	Y	Y	can't tell	N	Y	Y	N	Y	Y
Sakuma, 1997	single	govt, other	Y	N	can't tell	N	can't tell	Y	N	Y	Y

Evidence Table 23: Summary of population characteristics for prospective studies addressing question #2 (question #2b)

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Ohkubo, 1998	1728	general population in Japan	age ≥40	demented; bedridden; hospitalized	41.7		61		33.7
Sakuma, 1997	1256	general population in Japan	age≥40	demented; bedridden; hospitalized; prior stroke, atrial fibrillation	40.4		59.1 (11)		

Evidence Table 24: Summary of clinic measurement characteristics for prospective studies (question #2b)

Study	Device Type	Observer	Position	Measurements (Number)		
				Per Day	Days	Total
Ohkubo, 1998	automated	med tech, nurse	sitting	2	1	2
Sakuma, 1997	automated	nurse, physician	sitting	2	1	2

Evidence Table 25: Summary of self measurement characteristics for prospective studies addressing question #2 (question #2b)

Study	Device			Observer	Time of Recordings[a]			Measurements (Number)		
	Type	Name	Validated		Morning	Afternoon	Evening	Per day	Days	Total
Ohkubo, 1998	electronic or automated	HEM 401C	unknown	patient	Y	N	N	1	28	20.8
Sakuma, 1997	electronic or automated	HEM 401C	unknown	patient	Y	N	N	1	28	23

[a] morning = before noon, afternoon = noon to 6:00pm, evening = after 6:00pm

Evidence Table 26: Summary of methods in prospective studies (question #2b)

Study	Duration of follow-up Years	N	Outcome of Interest			Analyses Adjusted for	Comparison of Prediction
			n	Outcome	Description		
Ohkubo[a], 1998	6.6 (2.3)	1728	52	CVD Mortality	Deaths from cerebrovascular disease and cardiovascular disease	Age, Gender, Smoking, Prior CVD, BP medication	Not tested
		1728	160	Total Mortality	Total mortality		
Sakuma[a], 1997	4.4 (2.1)	1256	39	Stroke	Cerebral hemorrhage, Cerebral infarction, Subarachnoid hemorrhage or Undetermined type of stroke	Age, Gender, Smoking, BP level	Not tested

[a] Both papers from Ohasama study

Evidence Table 27: Prediction of outcome by clinic blood pressure and self-measured blood pressure (question #2b)

Study	Outcome	Contrast	Clinic Systolic		Self Systolic		Clinic Diastolic		Self Diastolic	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Ohkubo, 1998	CVD Mortality	Per mmHg	1	0.97	1.021	0.048	1.005	0.704	1.013	0.414
	Total Mortality	Per mmHg	1.001	0.84	1.014	0.012	1.002	0.73	1.012	0.16
Sakuma, 1997	Stroke	2nd VS 1st Quintile	2.12[b]	NS	1.03[b]	NS	2.89	NS	0.88[b]	NS
		3rd VS 1st Quintile	1.33[b]	NS	0.18[b]	NS	2.79	NS	1.06[b]	NS
		4th VS 1st Quintile	0.6[b]	NS	1.46[b]	NS	2.7	NS	1.19[b]	NS
		5th VS 1st Quintile	3.6[b]	<0.05	2.56[b]	NS	6.12	<0.05	3.12[b]	<0.05

[a] Both papers from Ohasama study
[b] Calculated from data in paper

Evidence Table 28: Summary of quality characteristics for self-measured blood pressure trials (question #2d)

Study	Center	Funding	Adequate Description					Self BP Instruction Provided	Outcome Assessor Blinded[a]	Between Group P-value Reported
			Eligibility	Sample Size Justification	Randomization	BP Therapy	Outcomes			
Bailey, 1999	single	can't tell	N	N	N	Y	Y	Y	N	Y
Binstock, 1988	single	can't tell	N	N	N	N	N	N	N	Y
Carnahan, 1975	single	can't tell	N	N	N	Y	Y	Y	Y	Y
Earp, 1982	single	govt	Y	N	N	N	Y	Y	Y	Y
Friedman, 1996	single	govt	Y	N	Partial	N	Y	N	Y	Y
Johnson, 1978	single	govt	Partial	N	Y	N	N	Y	Y	Y
Lehnert, 1987	can't tell	can't tell	Y	N	Y	Y	Y	Y	N	N
Midanik, 1991	single	other	N	N	N	N	Y	Y	N	N
Rogers, 2001	single	industry	Y	Y	Y	N	Y	Y	Y	Y
Soghikian, 1992	can't tell	other	N	N	Partial	N	Y	Y	N	N
Stahl, 1984	single	govt	Y	N	Y	Y	N	Y	N	N

Study	Center	Funding	Adequate Description					Self BP Instruction Provided	Outcome Assessor Blinded[a]	Between Group P-value Reported
			Eligibility	Sample Size Justification	Randomization	BP Therapy	Outcomes			
Vetter, 2000	multi	industry	Y	N	Partial	Y	Y	Y	N	N

Evidence Table 29: Summary of population characteristics for self-measured blood pressure trials (question #2d)

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Bailey, 1999	62	general clinic	inadequately controlled hypertension	unable to record self-BP	53.2		55.0	100	93.5
Binstock, 1988	112	can't tell	hypertensives	can't tell	40			100	
Carnahan, 1975	100	hypertension clinic	hypertensives	can't tell	98		55.2	100	0
Earp, 1992	218	general clinic, hypertension clinic	hypertensives; anti-hypertensive medicaton	alcoholism; mental illness	41	77	47.4	100	100
Friedman, 1996	267	general population	age >60 ; hypertensives; anti-hypertensive medication	unable to record self-BP	22.8	10.5	76.5		
Johnson, 1978	140	general population	age between 34 and 66; hypertensives; anti-hypertensive medication; uncontrolled BP on medication	can't tell	58.6		53.0	100	100
Lehnert, 1987	189	rehabilitation center	age between 19 and 61; hypertensives	diabetes; active CHD/CVD; secondary hypertension	78.3		41.2	100	63.5
Midanik, 1991	204	general clinic	untreated hypertensives	can't tell	47.5	48.5	47.3	100	0
Rogers, 2001	121	general clinic	hypertensives with elevated BP or symptoms	age <18; pregnancy; secondary hypertension	49.6	9.1	61.4	100	
Soghikian, 1992	430	general clinic	hypertensives	active CHD/CVD	49.8	39.1	54.3	100	85.1
Stahl, 1984	396	screening events	age between 15 and 71; hypertensives	anti-hypertensive medication	57.9	76.2	47.5	100	

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Vetter, 2000	622	general clinic	age between 17 and 86; hypertensives; anti-hypertensive medication	proteinuria/albuminuria; active CHD/CVD; contraindication to losartan; hepatic disease	49.2		57.5		100

Evidence Table 30: Summary of methods for self-measured blood pressure trials (question #2d)

Study	Objective	Duration (months)	Group	N	SMBP Intervention			
					Device Type	Device Name	SMBP Frequency	Co-Intervention
Bailey, 1999	To determine the effects of SMBP on BP control.	2	Control	30				
			SMBP	32	electronic or automated	Omron HEM 706	twice daily	
Binstock, 1988	To compare the effects of different compliance techniques with education alone (control group) on BP.	12	Control	32				
			SMBP	23	can't tell	can't tell	not discussed	
			Compliance Contract	15				
			Calender pill count	30				
			All of the above	11	can't tell	can't tell	not discussed	
Carnahan, 1975	To determine the effects of SMBP on BP control.	6	Control		electronic or automated	Ultrasphyg Lumiscope		
			SMBP				twice daily	
Earp, 1982	To determine the effects of social support strategies on BP control.	24	Control	63				
			SMBP and social support	99	can't tell	can't tell	not discussed	activated significant other
			Home visits	56				

Study	Objective	Duration (months)	Group	N	SMBP Intervention			
					Device Type	Device Name	SMBP Frequency	Co-Intervention
Friedman, 1996	To determine the effects of a SMBP / telecommunication system (TLC) on BP control.	6	Control	134				
			TLC	133	electronic or automated	Omron	weekly	telephone evaluation of medications, adherence, and symptoms
Johnson, 1978	To determine if SMBP improves BP control and compliance in poorly controlled hypertensives.	6	Control	34				
			SMBP and Home visit	35	can't tell	Taylor Syborn Corporation, Arden, NC	not discussed	
			SMBP	34			not discussed	
			Home visit	33				
Lehnert, 1987	To determine the effects of a multi-dimensional behavioral training program on BP.	1.5	Control	81				low salt diet, physical training
			Program	108	mercury		three times daily	low salt diet, physical training, multidimensional behavioral program

Study	Objective	Duration (months)	Group	N	SMBP Intervention			
					Device Type	Device Name	SMBP Frequency	Co-Intervention
Midanik, 1991	To determine the effects of SMBP on BP control.	12	Control	102				
			SMBP	102	electronic or automated	Tyco self check digital device	twice weekly	monthly BP reports sent to participants
Rogers, 2001	To determine if SMBP with telemetric transmission of data reduces BP.	2	Control	61				
			SMBP	60	electronic or automated	52500, Welch Allyn Inc.	3 each morning and evening, 3 days per week	weekly reports provided to patients and physicians
Soghikian, 1992	To determine the effects of SMBP on BP control.	12	Control	215				
			SMBP	215	electronic or automated	Tyco self check model 7052-8	twice weekly	monthly BP reports sent to MD and participant
Stahl, 1984	To determine whether BP monitoring by self (SMBP) or family reduces BP.	6	Control	173				
			Family monitoring of BP	79			not discussed	
			SMBP	144	mercury		not discussed	

Study	Objective	Duration (months)	Group	N	SMBP Intervention			
					Device Type	Device Name	SMBP Frequency	Co-Intervention
Vetter, 2000	To determine the effects of SMBP on BP control.	2	Control	326				
			SMBP	296	electronic or automated	Omron HEM 605	twice daily in morning	

Evidence Table 31: Characteristics of outcome measurements in self-measured blood pressure trials (question #2d)

Study	Measure	Device	Position	Measurements (Number)		
				Per Day	Days	Total
Bailey, 1999	clinic	mercury	sitting	can't tell		
Binstock, 1988	clinic	can't tell	can't tell	can't tell		
Carnahan, 1975	clinic	can't tell	sitting	3	1	3
Earp, 1982	clinic	can't tell	can't tell	can't tell		
Friedman, 1996	clinic	can't tell	can't tell	2	1	2
Johnson, 1978	clinic	can't tell	can't tell	can't tell		
Lehnert, 1987	clinic	can't tell	can't tell	1	3	3
Midanik, 1991	clinic	can't tell	can't tell	2	1	2
Rogers, 2001	ambulatory	SpaceLabs 90207	NA	NA	1	
Soghikian, 1992	clinic	can't tell	can't tell	1	1	1
Stahl, 1984	clinic	can't tell	can't tell	can't tell		
Vetter, 2000	clinic	can't tell	sitting	3	1	3

Evidence Table 32: Results of self-measured blood pressure trials (question #2d)

Study	Group	Systolic BP (mmHg)			Diastolic BP (mmHg)			Other Findings and Comments
		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		
			Change	P-value		Change	P-value	
Biley, 1999	Control	155 (21.52)			95 (10.76)			BP medications were more likely to be unchanged or increased in control group
	SMBP	156 (22.24)	5	<0.05	93 (11.12)	2	NS	
Binstock, 1988	Control	151			89			Unclear if significance test pertains to pair wise contrasts or overall comparison to control
	SMBP	149	-10	<0.01	90	-5	<0.01	
	Compliance Contract	142	-11	<0.01	88	-6	<0.01	
	Calender pill count	156	-17	<0.01	92	-10	<0.01	
	All of above	147	-10	<0.01	88	-7	<0.01	
Camhan, 1975	Control	156.6			103.6			
	SMBP	152.7	-7.5	<0.05	101.7	0	NS	
Earp, 1982	Control							BP control (DBP <95mmHg) significantly improved in both intervention groups (75% and 79%) compared to control group (58%) at end of follow-up.
	SMBP and social support							

Study	Group	Systolic BP (mmHg)			Diastolic BP (mmHg)			Other Findings and Comments
		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		
			Change	P-value		Change	P-value	
	Home visits							
Friedman, 1996	Control				84			Improved adherence in TLC group
	TLC		-4.7	0.2	86.1	-4.4	0.02	
Johnson, 1978	Control				103.2 (10.2)			
	SMBP and Home visit				104.2 (6.5)	-0.5	NS	
	SMBP				102.6 (7.2)	-1.3	NS	
	Home visit				103.9 (6.31)	-0.9	NS	
Lehnert, 1987	Control	169.8			104			Fewer persons on medications and less medication use in active treatment group
	Program	168.4	-0.4		104.6	0.5		
Midanik, 1991	Control	144 (16.8)			92.7 (7.7)			No difference in percent of participants started on medications
	SMBP	144.4 (15.7)	-2.4	NS	91.3 (9.1)	0.1	NS	

Study	Group	Systolic BP (mmHg)			Diastolic BP (mmHg)			Other Findings and Comments
		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		Baseline Mean (SD)	Change from Baseline in intervention groups, net of control		
			Change	P-value		Change	P-value	
Rogers, 2001	Control							Similar results by gender. Significant net reduction in mean arterial pressure in African Americans (14.9 mmHg)
	SMBP		-4.8[a]	0.047		-4.1[a]	0.01	
Soghikian, 1992	Control	140.2 (17.91)			86.3 (11.02)			Reduced HTN costs and visits in SMBP group. Significant BP reduction in men but not in women
	SMBP	137.4 (16.96)	-4.5	<0.05	86.1 (8.48)	-1.6	0.05	
Stahl, 1984	Control				108.6			Fewer dropouts from family care group
	Family monitoring of BP				107	-0.9	NS	
	SMBP				109.7	-1.1	NS	
Vetter, 2000	Control	168.1 (14.44)			102 (5.95)			BP control (diastolic BP $\leq$ 90 mmHg) 66.2% in SMBP vs 59.8% in control (0.05<p<0.10), achieving statistical significance in women (73.2% vs 64.1%, p<0.01) but not in men (59.2% vs 55.3%, p>0.20).
	SMBP	166.1(14.44)	-0.05		101.9 (6.19)	-1.3		

[a] Ambulatory Blood Pressure

Evidence Table 33: Summary of quality characteristics for articles addressing question #3

Study	Center	Funding	Adequate Description		Clinic BP Observer			Ambulatory BP Trained	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique		
Baguet, 2001	single	can't tell	Y	Y	can't tell	Y	Y	Y	Y
Bauduceau, 1998	multi	can't tell	Y	Y	can't tell	Y	N	can't tell	Y
Chen, 1995	multi	govt, other	Y	Y	can't tell	N	can't tell	Y	Y
Cuspidi, 2000	single	can't tell	Y	Y	can't tell	N	Y	Y	Y
Devereux, 1983	single	govt, other	Y	Y	can't tell	N	can't tell	Y	Y
Ferrara, 1997	single	can't tell	Y	Y	can't tell	Y	Y	Y	Y
Gosse, 1993	single	can't tell	Y	Y	can't tell	N	can't tell	can't tell	Y
Gosse, 1997	single	can't tell	Y	Y	can't tell	Y	N	N	Y
Hansen, 1992	single	other	N	Y	can't tell	N	N	Y	Y
Hoegholm, 1994	multi	other	Y	Y	can't tell	Y	can't tell	can't tell	Y
Hoegholm, 1999	multi	can't tell	Y	Y	N	Y	N	can't tell	Y
Jula, 1999	single	can't tell	Y	Y	Y	Y	Y	can't tell	Y
Lemne, 1995	single	govt, industry	Y	Y	Y	Y	Y	can't tell	Y
Manning, 1999	single	can't tell	Y	Y	can't tell	Y	Y	Y	Y
Martinez, 1999	multi	govt, industry	Y	Y	Y	Y	Y	Y	Y
Martinez, 2001	multi	govt, industry	Y	Y	can't tell	Y	Y	Y	Y
Myers, 1995b	single	can't tell	Y	Y	Y	Y	can't tell	can't tell	Y
Palatini, 1998	multi	can't tell	Y	Y	can't tell	N	Y	Y	Y
Pierdomenico, 1995	single	can't tell	Y	Y	can't tell	Y	Y	Y	Y
Pose-Reino, 1996	single	can't tell	Y	Y	can't tell	Y	can't tell	can't tell	Y

Study	Center	Funding	Adequate Description		Clinic BP Observer			Ambulatory BP Trained	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique		
Redon, 1994	single	industry	Y	Y	can't tell	N	Y	can't tell	Y
Redon, 1996	can't tell	can't tell	Y	Y	can't tell	N	Y	can’t tell	Y
Schulte, 1993	can't tell	can't tell	N	Y	can't tell	N	can't tell	can't tell	Y
Verdecchia, 1990	single	can't tell	Y	Y	can't tell	Y	can't tell	can't tell	Y
Verdecchia, 1995	multi	other	Y	Y	can't tell	N	can't tell	can't tell	Y
Weber, 1994	single	govt	Y	Y	can't tell	Y	Y	can't tell	Y
Zakopoulos, 1999	can't tell	can't tell	Y	Y	can't tell	N	can't tell	Y	Y

Evidence Table 34: Summary of population characteristics for articles addressing question #3

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Baguet, 2001	200	hypertension clinic	hypertensives	regional wall motion abnormalities on echocardiogram; valvular disease or cardiomyopathy	62		51 (13)	100	0
Bauduceau, 1998	171	other research study	hypertensives; diabetes	age <18 and >75; anti-hypertensive medication; serum creatinine >1500 ml/L	54		62 (10)	100	0
Chen, 1995	1682	general population	hypertensives; normotensives	can't tell			54.8 (13.1)	34.6	
Normotensive	720				51		51.3 (13.4)	0	13
Borderline hypertensive	380				54		58.1 (12.2)	0	40
Hypertensive	582				50		57 (12.4)	100	53
Cuspidi, 2000	100	hypertension clinic	hypertensives; anti-hypertensive medication	active CHD/CVD; obesity; cardiac valve disease; conditions preventing ABPM (afib)	61		56.5 (8.8)	100	100
Devereux, 1983	100	hypertension clinic	hypertensives; normotensives	active CHD/CVD	81		42.4	81	0

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Ferrara, 1997	108	can't tell	hypertensives; normotensives	anti-hypertensive medication; diabetes; chronic renal insufficiency; active CHD/CVD; liver cirrhosis; chronic lung disease; lactation; oral contraceptive use; no echocardiograph	63.9		42.3 (10.2)	70.4	0
Gosse, 1993	204	other specialty clinic	hypertensives	anti-hypertensive medication; active CHD/CVD; secondary hypertension	68.6		50 (11)	100	0
Gosse, 1997	181	hypertension clinic	hypertensives	anti-hypertensive medication; active CHD/CVD; poor quality echocardiograph	70.7		50 (11)	100	0
Hansen, 1992	68	general population	age <50; Type I diabetes	pregnancy; anti-hypertensive medication	70.6		30.5 (10.2)		0
Hoegholm, 1994	411	general practitioners; general population		anti-hypertensive medication; diabetes; dialysis; chronic renal insufficiency; renal transplant	46.4			69	0
Normotensive	127				50.4		53.4 (15.4)	0	0
Hypertensive	284				44.7			100	0

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Hoegholm, 1999	566	general practitioners; general population	hypertensives; normotensives	anti-hypertensive medication; diabetes; active CHD/CVD	47.5			74.2	0
Jula, 1999	233	general clinic	age between 34 and 55; hypertensives	pregnancy; anti-hypertensive medication; diabetes; active CHD/CVD; valvular heart disease	58.4		46 (4.9)	100	0
Lemne, 1995	138	general population	males	can't tell	100			50	
Normotensives	69				100		49.5 (5.7)	0	
Borderline hypertensives	69				100		50 (5.5)	100	
Manning, 1999	186	hypertension clinic	hypertensives	anti-hypertensive medication;	51.1		46	100	0
Martinez, 1999	345	general clinic	hypertensives	racial groups; normotensives; anti-hypertensive medication; significant concomitant diseases	47.8	0	51.8 (10.6)	100	0
Women	180				0	0		100	0
Men	165				100	0		100	0
Martinez, 2001	223	general clinic	hypertensives	age <18 age >75; normotensives; anti-hypertensive medication; diabetes; chronic renal insufficiency; renal transplant; active CHD/CVD	49.8	0	53 (11)	100	0

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Myers, 1995b	147	primary care family physicians	hypertensives; anti-hypertensive medication	age <21 age >80; dialysis;chronic renal insufficiency;renal transplant; active CHD/CVD	38.1		64	100	100
Men	56				100			100	100
Women	91				0			100	100
Palatini, 1998	1037	can't tell	age between 18 and 45; hypertensives; normotensives	anti-hypertensive medication	72		33.3 (8.6)	90.8	0
Pierdomenico, 1995	100	can't tell	no specific population	anti-hypertensive medication; diabetes; chronic renal insufficiency; active CHD/CVD; limited echocardiograhpic	50		47.8 (10.0)	75	0
Pose-Reino, 1996	102	other specialty clinic	hypertensives; normotensives	anti-hypertensive medication; active CHD/CVD; clinic DBP >104 mmHg	52.9			50	0
Redon, 1994	127	can't tell	age between 25 and 50; hypertensives; normotensives	anti-hypertensive medication; diabetes; chronic renal insufficiency; GFR< 80ml/min/1.73m^2	64.6		38.9 (73)		0
Redon, 1996	151	can't tell	age between 25 and 50; hypertensives; normotensives;	anti-hypertensive medication; diabetes; chronic renal insufficiency; GFR< 80ml/min/1.73m^2	63.6		37 (8)		0

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Schulte, 1993	142	can't tell	hypertensives; normotensives	unknown	51.4		49	68.3	0
Normotensive	45				53.3		46 (8)	0	0
Hypertensive	97				50.5		47.5 (9)	100	0
Verdecchia, 1990	235	can't tell	no specific population	anti-hypertensive medication; active CHD/CVD				58.3	0
Normotensive	98				51		51.9 (14)	0	0
Hypertensive	137				53		52.5 (11)	100	0
Verdecchia, 1995	1414	can't tell	no specific population	congestive heart failure; valvular disease; concomitant disease	44.8		50 (12)	87.4	0
Weber, 1994	259	hypertension clinic	no specific population	anti-hypertensive medication; diabetes; chronic renal insufficiency; active CHD/CVD; hepatic disorder	84.6			66	0
Zakopoulos, 1999	153	can't tell	hypertensives	normotensives; anti-hypertensive medication; active CHD/CVD	54.2			100	0

Evidence Table 35: Summary of clinic measurement characteristics for articles addressing question #3

Study	Device Type	Observer	Position	Measurements (Number)		
				Per Day	Days	Total
Baguet, 2001	mercury	can't tell	supine	1	3	3
Bauduceau, 1998	mercury	physician	sitting	3	1	3
Chen, 1995	can't tell	physician	sitting	2	1	2
Cuspidi, 2000	mercury	physician	sitting	3	1	3
Devereux, 1983	can't tell	physician	can't tell	can't tell		
Ferrara, 1997	automated	can't tell	supine	2	3	6
Gosse, 1993	mercury	physician	supine	3	1	3
Gosse, 1997	mercury	physician	supine	3	1	3
Hansen, 1992	mercury random zero	can't tell	sitting	3	1	3
Hoegholm, 1994	multiple devices	can't tell	sitting	can't tell		
Hoegholm, 1999	multiple devices	can’t tell	sitting	can’t tell		
Jula, 1999	mercury	nurse	sitting	2	4	8
Lemne, 1995	mercury	nurse	can't tell	can't tell		
Manning, 1999	mercury	can't tell	combination	3	3	9
Martinez, 1999	mercury	nurse, physician	sitting	2	3	6
Martinez, 2001	mercury	physician	sitting	2	3	6
Myers, 1995b	mercury	nurse	sitting	3	2	6
Palatini, 1998	can't tell	can't tell	supine	3	2	6
Pierdomenico, 1995	can't tell	can't tell	supine	3	1	3
Pose-Reino, 1996	can't tell	can't tell	can't tell	can't tell		
Redon, 1994	mercury	can't tell	sitting	3	1	3
Redon, 1996	mercury	can't tell	sitting	3	3	9
Schulte, 1993	can't tell	can't tell	can't tell	can't tell		
Verdecchia, 1990	mercury random zero	can't tell	supine	can't tell		
Verdecchia, 1995	can't tell	can't tell	can't tell	can't tell		
Weber, 1994	can't tell	can't tell	sitting	1	3	3

Study	Device Type	Observer	Position	Measurements (Number)		
				Per Day	Days	Total
Zakopoulos, 1999	can't tell	can't tell	can't tell	3	3	9

Evidence Table 36: Summary of ambulatory blood pressure measurement for articles addressing question #3

Study	Device			Daytime		Nighttime	
	Type	Name	Validated	Definition	Time Interval (mins)	Definition	Time Interval (mins)
Baguet, 2001	oscillometric	SpaceLabs 90207	Y	7:00am - 10:00pm	15	10:00pm - 7:00am	15
Bauduceau, 1998	oscillometric	SpaceLabs 90207	Y	7:00am - 10:00pm	15	10:00pm - 7:00am	15
Chen, 1995	oscillometric	SpaceLabs 90207	Y	7:00am - 10:00pm	20	11:00pm - 6:00am	60
Cuspidi, 2000	oscillometric	SpaceLabs 90207	Y	7:00am - 11:00pm	15	11:00pm - 7:00am	20
Devereux, 1983	unknown	Pressurometer II	unknown	patient reported	15	patient reported	15
Ferrara, 1997	oscillometric	SpaceLabs 90207	Y	7:00am - 10:45pm	15	11:00pm - 6:40am	20
Gosse, 1993	auscultatory unknown	DIASYS 200 SpaceLabs 5200	N unknown	6:00pm - 10:00am	15	10:00pm - 6:00am	can't tell
Gosse, 1997	auscultatory unknown	DIASYS 200 SpaceLabs 5200	N unknown	6:00am - 10pm	15	10:00pm - 6:00pm	can't tell
Hansen, 1992	oscillometric	SpaceLabs 90202	Y	6:00am - 12:00pm	20	12:00pm - 6:00am	60
Hoegholm, 1994	unknown	TM-2420 (no model specified)	unknown	7:00am - 10:59pm	15	11:00pm - 6:59am	30
Hoegholm, 1999	oscillometric oscillometric	TM-2420, Model 7 TM-2420, Model 6	Y Y	8:00am - 9:59pm	15	12:00am - 5:59am	30
Jula, 1999	auscultatory	Accutracker II	N	6:00pm - 11:00am	15	11:00pm - 6:00am	30
Lemne, 1995	auscultatory	Pressurometer IV	unknown	patient reported	15	patient reported	15
Manning, 1999	auscultatory	Medilog ABP	N	patient reported	30	patient reported	30
Martinez, 1999	oscillometric	SpaceLabs 90207	Y	10:00am - 8:00pm	15	12:00pm - 6:00am	15
Martinez, 2001	oscillometric	SpaceLabs 90207	Y	10:00am - 8:00am	15	12:00am - 6:00am	30
Myers, 1995b	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	can't tell	15	not measured	not measured
Palatini, 1997	oscillometric oscillometric	SpaceLabs 90207 TM-2420, Model 7	Y Y	6:00am - 11:00pm	10	11:00pm - 6:00am	15

Study	Device			Daytime		Nighttime	
	Type	Name	Validated	Definition	Time Interval (mins)	Definition	Time Interval (mins)
Palatini, 1998	oscillometric oscillometric	SpaceLabs 90207 TM-2420, Model 7	Y Y	can't tell	10	can't tell	30
Pierdomenico, 1995	oscillometric	SpaceLabs 90207	Y	6:00am - 12:00am	15	12:00am - 6:00am	30
Pose-Reino, 1996	auscultatory	Accutracker II	N	8:00am - 10:00pm	20	10:00pm - 8:00am	30
Redon, 1994	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	6:00am - 12:00pm	20	12:00pm - 6:00am	30
Redon, 1996	oscillometric oscillometric	SpaceLabs 90202 SpaceLabs 90207	Y Y	6:00am - 12:00pm	20	12:00pm - 6:00am	30
Schulte, 1993	oscillometric	SpaceLabs 90207	Y	patient reported	15	patient reported	30
Verdecchia, 1990	unknown	SpaceLabs 5200	unknown	6:00am - 10:00pm	15	8:00pm - 6:00am	15
Verdecchia, 1995	oscillometric oscillometric unknown	SpaceLabs 90202 SpaceLabs 90207 SpaceLabs 5200	Y Y unknown	6:00pm - 10:00pm	15	10:00pm - 6:00am	15
Weber, 1994	oscillometric	SpaceLabs 90207	Y	6:00am - 10:00pm	15	10:00pm - 6:00am	15
Zakopoulos, 1999	oscillometric	SpaceLabs 90207	Y	6:00am - 10:00pm	15	10:00pm - 6:00am	15

Evidence Table 37: Characteristics of measures of left ventricular mass (question #3)

Study	Left ventricular mass		Left ventricular hypertrophy	
	Units	Mean (SD)	Criteria	Prevalence (%)
Baguet, 2001	LV mass by surface area (g/m^2)	108 (26)	not applied	unknown
Chen, 1995	LV mass by surface area (g/m^2)			
Borderline hypertensive		92.4 (18.5)	not applied	unknown
Hypertensive		99.5 (20.1)	not applied	unknown
Normotensive		85.4 (25.3)	not applied	unknown
Cuspidi, 2000	LV mass by surface area (g/m^2)	unknown	125 males 100 females	28
Devereux, 1983	LV mass by surface area (g/m^2)	104.9 (26.2)	not applied	unknown
Ferrara, 1997	LV mass by $height^{2.7}$ ($g/m^{2.7}$)	43.1 (10.2)	not applied	unknown
Gosse, 1993	LV mass by height (g/m)	140	not applied	unknown
Gosse, 1997	LV mass by surface area (g/m^2)	122 (31)	not applied	unknown
Hoegholm, 1999	unknown (g/m^2)	unknown	not applied	unknown
Jula, 1999	LV mass by surface area (g/m^2)	111(25)	not applied	unknown
Lemne, 1995	LV by $height^2$ (g/m^2)		134	
Borderline hypertensives		114 (22)		16
Normotensives		109 (22)		12
Manning, 1999	LV mass by surface area (g/m^2)	119.8 (31)	132 males 110 females	36.1
Martinez, 1999	LV mass by surface area (g/m^2)		not applied	unknown
Men		124.0 (26.9)	not applied	unknown
Women		103.4 (18.8)	not applied	unknown
Myers, 1995b	LV mass by surface area (g/m^2)	109	not applied	unknown
Palatini, 1998	LV mass by surface area (g/m^2)	89.1		unknown
Pierdomenico, 1995	LV by $height^2$ (g/m^2)	110.8 (10.1)	not applied	unknown

Study	Left ventricular mass		Left ventricular hypertrophy	
	Units	Mean (SD)	Criteria	Prevalence (%)
Pose-Reino, 1996	LV mass by surface area (g/m^2)	unknown	134 males 110 females	unknown
Redon, 1996	LV mass by height (g/m)	140.6 (44.1)	140 males 120 females	34
Schulte, 1993	LV mass by surface area (g/m^2)	unknown	135 males 110 females	unknown
Normotensive		93.1(21.4)	not applied	0
Hypertensive		137.2 (28.4)	not applied	51.5
Verdecchia, 1990	LV mass by surface area (g/m^2)	unknown	not applied	unknown
Hypertensive		unknown	not applied	unknown
Normotensive		82.4 (31)	not applied	unknown
Verdecchia, 1995	LV mass by surface area (g/m^2)	unknown	not applied	unknown
Weber, 1994	LV mass by surface area (g/m^2)	unknown	not applied	unknown
Zakopoulos, 1999	LV mass by surface area (g/m^2)	125.4 (47.2)	not applied	unknown

Evidence Table 38: Correlation of clinic and ambulatory blood pressure with left ventricular mass (question #3)

Study	Correlations with Systolic BP (P-value)				Correlations with Diastolic BP (P-value)				Adjustment factors	Multivariate Model
	Clinic	24 hr	Daytime	Nighttime	Clinic	24 hr	Daytime	Nighttime		
Baguet, 2001	0.34 (<0.001)	0.37 (<0.001)	0.35 (<0.001)	0.37 (<0.001)	0.25 (<0.001)	0.28 (<0.001)	0.23 (<0.001)	0.29 (<0.001)	unadjusted	Y
Chen, 1995	0.34 (<0.01)	0.43 (<0.01)	0.42 (<0.01)	0.41 (<0.01)	0.2 (<0.01)	0.32 (<0.01)	0.33 (<0.01)	0.29 (<0.01)	unadjusted	Y
Borderline hypertensive	0.16 (<0.01)	0.27 (<0.01)	0.26 (<0.01)	0.24 (<0.01)	-0.13 (>0.05)	0.07 (>0.05)	0.07 (>0.05)	0.06 (>0.05)	unadjusted	Y
Normotensive	0.16 (<0.01)	0.31 (<0.01)	0.31 (<0.01)	0.29 (<0.01)	-0.01 (>0.05)	0.16 (<0.01)	0.19 (<0.01)	0.14 (<0.01)	unadjusted	Y
Hypertensive	0.25 (<0.01)	0.39 (<0.01)	0.38 (<0.01)	0.37 (<0.01)	0.04 (>0.05)	0.25 (<0.01)	0.26 (<0.01)	0.22 (<0.01)	unadjusted	Y
Cuspidi, 2000	0.13 (>0.05)	0.35 (<0.01)	0.30 (<0.01)	0.32 (<0.01)	0.11 (>0.05)	0.38 (<0.01)	0.36 (<0.01)	0.34 (<0.01)	unadjusted	N
Devereux, 1983	0.24 (<0.05)	0.38 (<0.001)		0.10 (>0.05)	0.20 (<0.05)	0.31 (<0.01)		0.24 (<0.05)	unadjusted	N
Gosse, 1993	0.18 (<0.01)		0.30 (<0.001)		0.2 (<0.01)		0.18 (<0.01)		unadjusted	Y
Gosse, 1997	0.24 (<0.01)	0.39 (<0.001)			0.18 (<0.05)	0.26 (<0.001)			age	Y
Jula, 1999	0.4 (<0.001)	0.44 (<0.001)	0.46 (<0.001)	0.35 (<0.001)	0.37 (<0.001)	0.37 (<0.001)	0.37 (<0.001)	0.32 (<0.001)	unadjusted	Y
Lemne, 1995										
Normotesive	0.03 (>0.05)	0.28 (<0.05)	0.22 (>0.05)		0.14 (>0.05)	0.21 (>0.05)	0.15 (>0.05)		unadjusted	N
Borderline hypertensive	0.23 (>0.05)	0.49 (<0.001)	0.52 (<0.001)		0.02 (>0.05)	0.16 (>0.05)	0.16 (>0.05)		unadjusted	N
Martinez, 1999										

Study	Correlations with Systolic BP (P-value)				Correlations with Diastolic BP (P-value)				Adjustment factors	Multivariate Model
	Clinic	24 hr	Daytime	Nighttime	Clinic	24 hr	Daytime	Nighttime		
Men	0.26	0.18 (>0.05)	0.13 (>0.05)	0.11 (>0.05)	0.02 (>0.05)	0.14 (>0.05)	0.09 (>0.05)	0.09 (>0.05)	unadjusted	N
Women	0.17 (>0.05)	0.43 (<0.01)	0.38 (<0.01)	0.37 (<0.01)	0.06 (>0.05)	0.34 (<0.01)	0.24 (<0.01)	0.37 (<0.01)	unadjusted	N
Myers, 1995b	0.23 (<0.01)		0.24 (<0.01)		0.02 (>0.05)		0.09 (>0.05)		unadjusted	N
Redon, 1996	0.24 (<0.05)	0.41 (<0.05)			0.19 (>0.05)	0.3 (<0.05)			unadjusted	Y
Schulte, 1993	0.52 (<0.001)	0.55 (<0.001)	0.56 (<0.001)	0.5 (<0.001)	0.46 (<0.001)	0.51 (<0.001)	0.52 (<0.001)	0.43 (<0.001)	unadjusted	N
Normotensive	0.28 (>0.05)	0.33 (<0.05)	0.37 (<0.05)	0.21 (>0.05)	0.3 (>0.05)	0.29 (>0.05)	0.2 (>0.05)	0.19 (>0.05)	unadjusted	N
Hypertensive	0.37 (<0.01)	0.48 (<0.001)	0.45 (<0.001)	0.44 (<0.001)	0.21 (>0.05)	0.35 (<0.001)	0.41 (<0.001)	0.38 (<0.001)	unadjusted	N
Verdecchia, 1990	0.38 (<0.01)	0.48 (<0.01)	0.4 (<0.01)	0.47 (<0.01)	0.29 (<0.01)	0.36 (<0.01)	0.28 (<0.01)	0.37 (<0.01)	unadjusted	Y
Normotensive	0.36 (<0.01)	0.33 (<0.01)	0.31 (<0.01)	0.29 (<0.01)	0.02 (<0.01)	0.15 (<0.01)	0.16 (<0.01)	0.17 (<0.01)	unadjusted	Y
Hypertensive	0.33 (<0.01)	0.51 (<0.01)	0.38 (<0.01)	0.51 (<0.01)	0.27 (<0.01)	0.34 (<0.01)	0.2 (<0.01)	0.35 (<0.01)	unadjusted	Y
Zakopoulos, 1999	0.33 (<0.001)	0.35 (<0.001)			0.19 (<0.01)	0.32 (<0.001)			unadjusted	Y

Evidence Table 39: Correlation of left ventricular mass with ambulatory blood pressure defined white coat hypertension (question #3)

Study	Cut-off values for HTN		Distribution of BP (%)			LV mass				Comparison (P-value)		Adjustment factors	Multivariate Model
	Clinic	ABPM	NT	WCH	SH	Units	Mean (SD)			WCH vs NT	SH vs WCH		
							NT	WCH	SH				
Ferrara, 1997	SBP > 140 DBP > 90	SBP > 130 DBP > 85	29.6	18.5	51.9	$g/m^{2.7}$	41.5 (10)	41.5 (11)	44.5 (10)	0	3	unadjusted	N
Hoegholm, 1999	DBP > 91	SBP > 135 DBP > 90		13.4		g/m^2	98.2 (29.1)	89.7 (18.9)	107.5 (28.5)	-8.5	17.8	unadjusted	N
Manning, 1999	SBP > 140 DBP > 90	SBP > 137 DBP > 87		22.6	77.4	g/m^2		102 (23)	125 (33)		23 (<0.001)	unadjusted	N
Martinez, 1999	SBP > 140 DBP > 90	SBP > 135 DBP > 85		39.4	60.6	g/m^2				NA	7.6	age, gender,BMI, duration of HTN	Y
Men				30.1	69.9	g/m^2		122.3 (27.7)	124.8 (26.6)	NA	2.5	unadjusted	N
Women				47.4	52.6	g/m^2		98.9 (18.9)	108.2 (18.8)	NA	9.3	unadjusted	N
Myers, 1995b				61.9	38.1	g/m^2		112	108	NA	-4 (>0.05)	unadjusted	N
Palatini, 1998	SBP > 140 DBP > 90	SBP > 135 DBP > 85	11.6	31.8	56.5	g/m^2	82.1 (1.85)	89.1 (16.1)	93.8 (17.2)	7 (<0.001)	4.7 (<0.001)	BMI	Y
Pierdomenico, 1995	SBP > 140 DBP > 90	SBP > 135 DBP > 85	25	25	50	g/m^2	93.9 (11)	97.6 (11.5)	125.9 (20)	3.7	28.3 (<0.05)	unadjusted	N
Pose-Reino, 1996	SBP > 140 DBP > 90	SBP > 135 DBP > 85	50	26.5	23.5	g/m^2	106 (25)	132 (46)	142 (45)	26	10	unadjusted	Y
Verdecchia, 1995	SBP > 140 DBP > 90		11.8	16.7	71.5	g/m^2	87 (17)	93 (23)	112 (31)	6	19	unadjusted	N
Weber, 1994	DBP > 90	DBP > 85		22.4		g/m^2	122	126.5	130	4.5	8	unadjusted	N

Evidence Table 40: Characteristics of albuminuria measurement (question #3)

Study	Measurement	Collection Period	Mean (SD)	Micro-albuminuria	
				Criteria [a]	Prevalence (%)
Bauduceau, 1998	mg/24hrs	24 hours	unknown	30	43.3
Hansen, 1992	mg/24hrs	can't tell	40.9 (1.9)	28.8	50
Hoegholm, 1994	mg/mg creatinine	spot	unknown	0.5	unknown
Jula, 1999	mg/24hrs	24 hours	25.7 (39.3)	NA	unknown
Martinez, 1999	mg/24hrs	8 hours for 3 days	9.5	28.8	unknown
Martinez, 2001	mg/24hrs	8 hours for 3 days	unknown	28.8	7.2
Palatini, 1998	log (mg/24hrs)	24 hours	unknown	30	unknown
Pierdomenico, 1995	mg/24hrs	24 hours	unknown	30	unknown
Redon, 1996	mg/24hrs	24 hours for 2 days	25.1 (38.6)	30	24.4
Redon, 1994	mg/24hrs	24 hours for 2 days	30.1 (52.3)	30	28

[a] criteria same for females and males in each study

Evidence Table 41: Correlations of clinic and ambulatory blood pressure with albuminuria (question #3)

Study	Correlations with Systolic BP (P-value)				Correlations with Diastolic BP (P-value)				Adjustment factors	Multivariate Model
	Clinic	24 hr	Daytime	Nighttime	Clinic	24 hr	Daytime	Nighttime		
Hansen, 1992	0.21 (0.09)		0.45 (<0.001)	0.53 (<0.001)					unadjusted	Y
Hoegholm, 1994										Y
Normotensives	0.23 (<0.01)		0.2	0.19 (>0.05)	0.26 (<0.01)		0.15	0.22 (<0.01)	unadjusted	
Hypertensives	0.11		0.21 (<0.001)	0.28 (<0.001)	-0.05		0.09 (>0.05)	0.19 (<0.01)	unadjusted	
Jula, 1999	0.34 (<0.001)	0.32 (<0.001)	0.33 (<0.001)	0.25 (<0.001)	0.25 (<0.001)	0.23 (<0.001)	0.24 (<0.001)	0.16 (<0.05)	unadjusted	N
Martinez, 2001	0.09 (>0.05)	0.22 (<0.01)	0.15 (<0.05)	0.33 (<0.01)	0.05 (>0.05)	0.2 (<0.01)	0.2 (<0.01)	0.27 (<0.01)	unadjusted	Y
Redon, 1994	0.1 (>0.05)	0.34 (>0.05)			0.16 (>0.05)	0.34 (>0.05)			unadjusted	Y
Redon, 1996	0.31 (<0.05)	0.37 (<0.05)			0.31 (<0.05)	0.38 (<0.05)			unadjusted	N

Evidence Table 42: Correlation of ambulatory blood pressure defined white coat hypertension with albuminuria (question #3)

Study	Cut-off values for HT		Distribution of hypertension (%)			Units	Mean albuminuria (SD)			Comparison (P-value)		Adjustment factors	Multivariate Model
	Clinic	ABP	NT	WCH	SH		NT	WCH	SH	WCH vs NT	SH vs WCH		
Bauduceau, 1998	DBP > 90	SBP > 139 DBP> 87		73.7	26.3	mg/24hrs		22	44		22 (<0.01)	unadjusted	Y
Hoegholm, 1994	DBP > 90	DBP > 90		27	42	mg/24hrs creatinine	20.9 (69.4)	22 (38.6)	51.2 (177)			unadjusted	
Hoegholm, 1999	DBP > 91	SBP > 135 DBP > 90		13.4	60.7	log (mg/24hrs creatinine)	-0.161 (0.357)	-0.067 (0.386)	0.104 (0.466)	(<0.05)	(<0.05)	unadjusted	Y
Martinez, 1999	SBP > 140 DBP > 90	SBP > 135 DBP > 85		39.4	60.6	mg/24hrs		7.1	11.8		4.7	unadjusted	N
Martinez, 2001	SBP > 140 DBP > 90			32.2	67.7	mg/24hrs		7.2 (2.9)	9.6 (2.9)		2.4 (<0.05)	unadjusted	Y
Palatini, 1998	SBP > 140 DBP > 90	SBP > 135 DBP > 85	11.6	31.8	56.5	log (mg/24hrs)		0.67 (0.48)	0.76 (0.43)			BMI	N
Pierdomenico, 1995	SBP > 140 DBP > 90	SBP > 135 DBP > 85	25	25	50	mg/24hrs	4.31 (1.1)	4.45 (1.48)	15.1 (13.8)	0.2 (>0.05)	10.6 (<0.001)	unadjusted	N

Evidence Table 43: Summary of quality characteristics for prospective studies addressing question #3 (question #3b)

Study	Centers	Funding	Adequate description		Clinic BP Observer			Ambulatory BP Trained	Blinded Outcome Assessment	Follow up data for ≥80%	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique				
Amar, 2000	single	can't tell	Y	Y	can't tell	N	Y	Y	N	Y	Y
Fagard, 2000	multi	govt, industry	N	Y	can't tell	Y	can't tell	can't tell	Y	Y	Y
Gosse, 1997	single	can't tell	Y	Y	can't tell	N	can't tell	can't tell	N	Y	Y
Nakano, 1999	single	other	N	Y	can't tell	N	can't tell	can't tell	N	N	Y
Ohkubo, 1997a	single	govt, other	Y	Y	can't tell	N	can't tell	can't tell	Y	Y	Y
Ohkubo, 1997b	single	govt, other	Y	Y	can't tell	N	Y	can't tell	Y	Y	Y
Ohkubo, 2000	single	govt, other	Y	Y	can't tell	N	Y	can't tell	Y	Y	Y
Perloff, 1989	single	govt, other	N	Y	can't tell	N	Y	can't tell	N	Y	Y
Redon, 1998	single	can't tell	Y	Y	can't tell	Y	Y	can't tell	N	Y	Y
Staessen, 1999	multi	govt, industry, other	Y	Y	can't tell	N	can't tell	can't tell	Y	Y	Y
Suzuki, 2000	single	can't tell	Y	Y	Y	N	can't tell	can't tell	N	Y	Y
Verdecchia, 1994	single	can't tell	Y	Y	can't tell	Y	Y	can't tell	Y	Y	Y

Study	Centers	Funding	Adequate description		Clinic BP Observer			Ambulatory BP Trained	Blinded Outcome Assessment	Follow up data for ≥80%	Statistical Variability Reported
			Eligibility	Baseline Characteristics	Trained	Blinded	Standard Technique				
Verdecchia, 1998	single	can't tell	Y	Y	can't tell	N	Y	can't tell	Y	Y	Y
Zweiker, 1994	single	can't tell	N	Y	can't tell	N	can't tell	Y	N	Y	Y

Evidence Table 44: Summary of population characteristics for prospective studies of ambulatory blood pressure measurement (question #3b)

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Amar, 2000	57	other specialty clinic	anti-hypertensive medication;dialysis	orthstatic hypotension; autonomic dysfunction	52.6		56.8	100	100
Fagard, 2000	695	Syst-Eur Trial	age >59 ; hypertensives; isolated systolic hypertension	can't tell	37.6		70	100	
Gosse, 1997	134	other specialty clinic other research study	age >45 ; hypertensives	diabetes; active CHD/CVD	56.7		61(11)	100	0
Nakano, 1999	257	Hospital	Type II diabetes		63			51	0
Ohkubo, 1997a	1542	general population	age >39	demented; bedridden; hospitalized	36.6		61.5		30.7
Ohkubo, 1997b	1542	general population	age >40	demented; bedridden; hospitalized	36.6		61.5		30.7
Ohkubo, 2000	1476	general population	age >40	demented; bedridden, hospitalized; prior stroke	40		61		27.4
Perloff, 1989	761	hypertension clinic	no specific population	dialysis; renal transplant	47.6		43.1		0
Redon, 1998	86	hypertension clinic	hypertensives; poorly controlled HTN on > 3 meds	diabetes; chronic renal insufficiency; secondary hypertension	29.1		53.3	100	100
Staessen, 1999	265	Syst-Eur Trial	age >60; hypertensives	chronic renal insufficiency	38.5		69.6 (6.2)	100	0

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Suzuki, 2000	134	general population	elderly	autonomic dysfunction; physical disability	50		78.5 (7)	100	100
Verdecchia, 1994	1392	general clinic	hypertensives; normotensives	heart failure; valvular; heart disease	50.3	51.3		85.3	
Male	479				100		51.72		
Female	480				0		54.15		
Verdecchia, 1998	2010	general clinic	hypertensives	anti-hypertensive medication; secondary cause of hypertension	52	0	52 (12)	100	0
Zweiker, 1994	116	general clinic	hypertensives	can't tell	42.2		59 (13)		

Evidence Table 45: Summary of methods for prospective studies of ambulatory blood pressure measurement (question #3b)

Study	Follow-up-Years mean (SD)	N	Outcomes			Analyses Adjusted for	Comparison of Prediction
			n	Outcome	Description		
Amar, 2000	2.9 (1.7)	57	10	CVD Mortality	Ischemic heart disease, Stroke, Aortoiliac disease, Congestive heart failure, Sudden death	Age, Gender, Prior CVD	Not Tested
Fagard,[a] 2000		695	79	CVD Morbidity and Mortality	Sudden death, Stroke, MI, Heart failure	Gender, Prior CVD	Not Tested
			29	Stroke	Neurologic deficit lasting >24 hours or causing death		
Gosse, 1997	2.5 (0.7)	134	14	CVD Morbidity and Mortality	Stroke, MI, Angina, Heart failure, Renal failure, Lower limb arterial disease		ABP better than Clinic BP, by discriminant function analyses
Nakano, 1999	4.2	257	22	Dialysis	Incident hemodialysis	Age, Gender, Smoking, Blood pressure, Glycemic control, Duration of diabetes, Serum protein, Serum creatinine.	ABP better than Clinic BP, by stepwise regression analyses

Study	Follow-up-Years mean (SD)	N	Outcomes			Analyses Adjusted for	Comparison of Prediction
			n	Outcome	Description		
Ohkubo,[b] 1997a	5.1 (2)	1542	93	Total Mortality	Total mortality	Age, Gender, Smoking, Anti hypertensive medications, Prior CVD	Not tested
			37	CVD Mortality	CVD Mortality		
Ohkubo,[b] 1997b	5.1 (2)	1542	93	Total Mortality	Total mortality	Age, Gender, Smoking, Anti hypertensive medications, Prior CVD	ABP better than Clinic BP, by stepwise regression analyses
			37	CVD Mortality	CVD Mortality		
Ohkubo,[b] 2000	6.4 (2)	1476	74	Stroke	Stroke or TIA	Age, Gender, Smoking, Cholesterol, Hematocrit, Prior CVD, Diabetes, BP medication	ABP better than Clinic BP, by stepwise regression analyses
Perloff, 1989	5.5 (3.5)	761	120	CVD Morbidity and Mortality	Cardiac, Cerebral and peripheral vascular diseases, Aortic dissection, Retinal vascular changes, Renal function decline, Heart failure	Age, Gender, LVH, BP medication, Optic fundus.	Incremental Gain of ABP over clinic BP, by residual model
Redon, 1998	4	86	21	CVD Morbidity and Mortality	MI, Angina, Coronary Revascularization, Stroke, TIA, Sudden death, Aortoiliac occlusive disease, Heart failure, Hypertensive emergencies	Prior CVD	ABP better than Clinic BP, by stepwise regression analyses

Study	Follow-up-Years mean (SD)	N	Outcomes			Analyses Adjusted for	Comparison of Prediction
			n	Outcome	Description		
Staessen,[a] 1999	4.4 [median]	265	39	Total Mortality	Total mortality	Age, Gender, Smoking, Prior CVD	Incremental Gain of ABP over clinic BP, by regression analyses with both variables entered in models
			22	CVD Mortality	CVD mortality		
			54	CVD Morbidity and Mortality	Fatal and Non fatal heart failure, MI, Sudden death, Stroke		
			20	Stroke	Fatal and non fatal stroke		
			35	Cardiac Morbidity and Mortality	Fatal and non fatal heart failure, MI		
Suzuki, 2000	4.3 (1.8)	134	34	CVD Morbidity and Mortality	MI, Angina, Cerebral infarction, Cerebral hemorrhage, TIA, Sudden death, Heart failure, Renal failure	Age, Gender, Smoking, Diabetes, LVH, Prior CVD	ABP better than Clinic BP, by stepwise regression analyses
Verdecchia,[c] 1994	3.2	1392	89	CVD Morbidity and Mortality	MI, Stroke, Sudden death, Heart failure, Stroke, TIA, Coronary revascularization, Angina, Ischemic changes on ECG, Aortoiliac occlusive disease, Retinal artery occlusion, Renal failure	Age, Diabetes, Prior CVD, Pulse Pressure, Clinic DBP, Smoking, Cholesterol, BMI, LVH	Not tested

Study	Follow-up-Years mean (SD)	N	Outcomes			Analyses Adjusted for	Comparison of Prediction
			n	Outcome	Description		
Verdecchia,[c] 1998	3.8 (2.4)	2010	36	CVD Morbidity and Mortality	New onset coronary artery disease, Stroke, TIA, Aortoiliac occlusive disease, Retinal artery occlusion, Heart failure, Renal failure	Age, Gender, Smoking, BMI, Smoking, Cholesterol, BP medications, LVH	ABP better than Clinic BP, by stepwise regression analyses
Zweiker, 1994	2.6	116	4	Total Mortality	Total mortality		Not tested
			5	CVD Morbidity and Mortality	MI, Apoplexy, TIA		

[a] One of two papers from Syst-Eur trial [b] One of three papers from Ohasama study [c] One of the two papers from PIUMA study

Evidence Table 46: Prediction of outcome by clinic blood pressure and systolic ambulatory blood pressure (question #3b)

Study	Outcome	Contrast	Clinic		Day Time		Night Time		24 Hour	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Amar, 2000	CVD Mortality	Per 10 mmHg	0.99	0.94	1.38	0.08	1.41	0.01	1.37	0.09
Goose, 1997	CVD Morbidity and Mortality	Per mmHg							1.03[d]	0.02
Ohkubo,[b] 1997b	Total Mortality	2nd VS 1st Quintile	0.95[e]	NS	0.7[e]	NS	1.1[e]	NS	0.59[e]	NS
		3rd VS 1st Quintile	0.96[e]	NS	0.54[e]	NS	0.43[e]	NS	0.49[e]	NS
		4th VS 1st Quintile	0.55[e]	NS	0.75[e]	NS	0.66[e]	NS	0.5[e]	NS
		5th VS 1st Quintile	1.23[e]	NS	1.08[e]	NS	1.37[e]	NS	1.15[e]	NS
Ohkubo,[b] 1997b	CVD Mortality	2nd VS 1st Quintile	1.09[e]	NS	0.14[e]	NS	1.35[e]	NS	0.34[e]	NS
		3rd VS 1st Quintile	1.63[e]	NS	0.64[e]	NS	1.62[e]	NS	0.39[e]	NS
		4th VS 1st Quintile	0.78[e]	NS	1.08[e]	NS	1.68[e]	NS	0.59[e]	NS
		5th VS 1st Quintile	1.77[e]	NS	1.26[e]	NS	4[e]	NS	1.58[e]	NS

Study	Outcome	Contrast	Clinic		Day Time		Night Time		24 Hour	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Ohkubo,[b] 2000	Stroke	Per 10 mmHg	1.02 - 1.06	NS	1.41	0.0001	1.34	0.0007	1.47	0.0001
Perloff, 1998	CVD Morbidity and Mortality	140-159 VS <140 mmHg	2.17[d,e]	0.047	2.47[d,e]	<0.001				
		160-179 VS <140 mmHg	3.32[d,e]	0.001	4.37[d,e]	<0.001				
		>180 VS <140 mmHg	7.13[d,e]	<0.001	6.13[d,e]	<0.001				
Redon, 1998	CVD Morbidity and Mortality	Middle VS Lowest Tertile			3.69	0.098				
		Highest VS Lowest Tertile			6.42	0.017				

Study	Outcome	Contrast	Clinic		Day Time		Night Time		24 Hour	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Staessen,[a] 1999	Total Mortality	Per 10 mmHg	1.21	NS	1.18	NS	1.24	<0.05	1.23	<0.05
	CVD Mortality	Per 10 mmHg	1.29	NS	1.3	<0.05	1.42	<0.01	1.34	<0.05
	CVD Morbidity and Mortality	Per 10 mmHg	1.09	NS	1.19	<0.05	1.31	<0.001	1.26	<0.01
	Stroke	Per 10 mmHg	1.3	NS	1.51	<0.01	1.3	<0.05	1.47	<0.01
	Cardiac Morbidity and Mortality	Per 10 mmHg	1.05	NS	1.07	NS	1.27	<0.05	1.14	NS
Suzuki, 2000	CVD Morbidity and Mortality	Per 10 mmHg		NS		NS	1.34	<0.01	1.28	<0.05
Verdecchia,[c] 1998	CVD Morbidity and Mortality	Per 10 mmHg	1.12	0.004					1.23	0.005

[a] One of two papers from Syst-Eur trial [b] One of three papers from Ohasama study [c] One of the two papers from PIUMA study
[d] Unadjusted [e] Calculated from data in paper

Evidence Table 47: Prediction of outcome by clinic blood pressure and diastolic ambulatory blood pressure (question #3b)

Study	Outcome	Contrast	Clinic		Day Time		Night Time		24 Hour	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Amar, 2000	CVD Mortality	Per 10 mmHg	0.49	0.03	1.04	0.89	1.4	0.19	0.93	0.84
Ohkubo,[a] 1997b	Total Mortality	2nd VS 1st Quintile	1.07[c]	NS	0.47[c]	NS	1.56[c]	NS	0.69[c]	NS
		3rd VS 1st Quintile	0.92[c]	NS	0.82[c]	NS	0.84[c]	NS	0.73[c]	NS
		4th VS 1st Quintile	0.87[c]	NS	0.73[c]	NS	0.68[c]	NS	0.7[c]	NS
		5th VS 1st Quintile	1.27[c]	NS	0.98[c]	NS	1.77[c]	NS	1.08[c]	NS
Ohkubo,[a] 1997b	CVD Morbidity and Mortality	2nd VS 1st Quintile	1.34[c]	NS	0.35[c]	NS	1.29[c]	NS	0.63[c]	NS
		3rd VS 1st Quintile	1.87[c]	NS	1.45[c]	NS	1.05[c]	NS	1.3[c]	NS
		4th VS 1st Quintile	1.28[c]	NS	1.24[c]	NS	1.05[c]	NS	1.44[c]	NS
		5th VS 1st Quintile	2.21[c]	NS	1.61[c]	NS	3.95[c]	NS	2.13[c]	NS
Ohkubo,[a] 2000	Stroke	Per 5 mmHg	1.05 - 1.09	NS	1.31	0.0004	1.24	0.0051		

Study	Outcome	Contrast	Clinic		Day Time		Night Time		24 Hour	
			Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value	Estimate (RR)	P-value
Perloff, 1998	CVD Morbidity and Mortality	90-99 VS <90 mmHg	2.78[b,c]	0.009	1.24[b,c]	0.31				
		100-109 VS <90 mmHg	2.42[b,c]	0.031	1.45[b,c]	0.12				
		> 110 VS <90 mmHg	5.61[b,c]	<0.001	2.46[b,c]	<0.001				
Suzuki, 2000	CVD Morbidity and Mortality	Per 10 mmHg		NS		NS	1.67	<0.01	1.71	<0.01

[a] One of three papers from Ohasama study [b] Unadjusted [c] Calculated from data in paper

Evidence Table 48: Prediction of Outcome by pattern of ambulatory blood pressure (white coat hypertension and dipping status) (question #3b)

Study	Outcome	White Coat Hypertension (WCH)				Non-Dipping		
		Definition	Contrast	Estimate (RR)	P-value	Contrast	Estimate (RR)	P-value
Amar, 2000	CVD Mortality					Non Dippers VS Dippers	4.61	0.06
Fagard[a], 2000	CVD Morbidity and Mortality	clinic SBP 160-219 mmHG daytime ABP < 140 mmHG	WCH VS Sustained HTN	0.35[d,e]	0.002			
	Stroke		WCH VS Sustained HTN	0.23[d,e]	0.03			
Nakano, 1999	Dialysis					Reversed Pattern VS Dippers	16.2	<0.05
Ohkubo,[b] 1997a	Total Mortality					Extreme Dipper VS Dippers	0.65	0.29
						Non Dippers VS Dippers	1.35	0.27
						Inverse Dipper VS Dippers	2.12	0.02
	CVD Mortality					Extreme Dipper VS Dippers	0.96	0.95
						Non Dippers VS Dippers	2.56	0.02
						Inverse Dipper VS Dippers	3.69	0.004

Study	Outcome	White Coat Hypertension (WCH)				Non-Dipping		
		Definition	Contrast	Estimate (RR)	P-value	Contrast	Estimate (RR)	P-value
Verdecchia,[c] 1994	CVD Morbidity and Mortality	clinic BP > 140/90 mmHG daytime ABP <131/86 mmHG (women) daytime ABP < 136/87 (men)	Normotensive VS Sustained HTN	0.17[e]		Non Dippers VS Dippers	1.69[e]	
			WCH VS Sustained HTN	0.18[e]				
	CVD Morbidity and Mortality (Men)					Non Dippers VS Dippers	1.04	0.91
	CVD Morbidity and Mortality (Women)					Non Dippers VS Dippers	6.79	0.0002
Verdecchia,[c] 1998	CV Morbidity and Mortality	clinic BP > 140/90 mmHG daytime ABP <131/86 mmHG (women) daytime ABP < 136/87 (men)	WCH VS Sustained HTN	0.3	0.007	Non Dippers VS Dippers	1.46	0.016
Zweiker, 1994	CVD Morbidity and Mortality					Non Dippers VS Dippers	12[d]	0.004
	Total Mortality					Non Dippers VS Dippers	9[d]	0.02

[a] One of two papers from Syst-Eur trial [b] One of three papers from Ohasama study [c] One of the two papers from PIUMA study [d] Unadjusted [e] Calculated from data in paper

Evidence Table 49: Summary of quality characteristics in ambulatory blood pressure measurement trials (question #3d)

Study	Centers	Funding	Adequate Description					Ambulatory BP Trained	Outcome Assessors Blinded	Between Group P-value Reported
			Eligibility	Sample Size Justification	Randomization	BP Therapy	Outcomes			
Schrader, 2000	multi	can't tell	Y	N	Partial	Y	Y	N	N	Y
Staessen, 1997	multi	industry	Y	N	Adequate	Y	Y	N	Y	Y

Evidence Table 50: Summary of population characteristics for ambulatory blood pressure measurement trials (question #3d)

Study	N	Setting	Target Population	Exclusions	Male (%)	Black (%)	Mean Age, years (SD)	HTN (%)	On BP medication (%)
Schrader, 2000	1298	general clinic	age between 34 and 66; normotensives	pregnancy; patients in other study; contraindication to ACE inhibitor	45.7		54.3	0	0
Staessen, 1997	419	general clinic	age >17; hypertensives	pregnancy; chronic renal insufficiency; active CHD/CVD; severe non-cardiac disease; alcohol or psychiatric disorder; hypertensive retinopathy	46.1		52.6	100	0

Evidence Table 51: Summary of methods in ambulatory blood pressure measurement trials (question #3d)

Study	Objective	Duration (months)	Group	N	BP Management Intervention
Schrader, 2000	To determine whether BP guided by ABPM has a better prognosis and requires less medications then BP guided by clinic measurement.	56.4	Control	647	Clinic BP measured at 1,3,9, 12 months and then annually
			ABPM	651	Annual ABP measurement and if office BP > 140/90 [SpaceLabs 90207: Every 15 minutes (day) and every 30 min (night)]
Staessen, 1997	To determine whether BP guided by ABPM would reduce medication use while controlling BP in comparison to BP guided by office measurements.	6.1	Control	206	BP measured at 1, 2, 4, and 6 months
			ABPM	213	ABP measured at 1, 2, 4, and 6 months [SpaceLabs 90207: Every 15 minutes (day) and every 30 min (night)]

Evidence Table 52: Characteristics of outcome measurements in ambulatory blood pressure measurement trials (question #3d)

Study	Measure	Device	Position	Measurements (Number)		
				Per Day	Days	Total
Schrader, 2000	clinic	can't tell	sitting	3	2	6
Staessen, 1997	clinic	can't tell	sitting	3	1	3
	ambulatory	SpaceLabs 90207	NA	NA	1	NA

Evidence Table 53: Effect of ambulatory blood pressure measurement interventions on clinic blood pressure (question #3d)

Study	Group	Systolic Blood Pressure (mmHg)			Diastolic Blood Pressure (mmHg)			Other Findings and Comments
		Baseline Mean (SD)	Change from Baseline in intervention group, net of control		Baseline Mean (SD)	Change from Baseline in intervention group, net of control		
			Change	P-value		Change	P-value	
Schrader, 2000	Control	167.6 (16.9)			99.5 (10)			White coat hypertensives excluded after randomization and replaced with other participants in the ABP group but not in the control group. Fewer CVD events and deaths in ABP vs control BP groups (20 vs 35, P=0.04). Similar rates of hypertension control in ABP and control (59.7% VS 53.4%). Similar use of medications in ABP and control group (31.3% vs 31.7%).
	ABP	165.9 (17.3)	1	NS	100 (10.1)	0	NS	
Staessen, 1997	Control	164.4 (20.3)			104 (9.4)			More ABP patients off of medications (26.3% vs 7.3%, P= <0.001). Fewer ABP patients needed multiple medications (27.2% vs 42.7%, P=<0.001). Change in left ventricular mass was similar in ABP and control group (-2 gm vs -6gm, p=0.56) Total costs (monitoring, medications, and physician fee) were similar in both groups.
	ABP	164.9 (20.3)	3.3	0.06	102.9 (8.9)	1.4	0.16	

Evidence Table 54: Effect of ambulatory blood pressure measurement interventions on 24 Hour, daytime and nighttime ambulatory blood pressure (question #3d)

Study	Group	Systolic Blood Pressure (mmHg)			Diastolic Blood Pressure (mmHg)		
		Baseline Mean (SD)	Change from Baseline in intervention group, net of control		Baseline Mean (SD)	Change from Baseline in intervention group, net of control	
			Change	P-value		Change	P-value
24 Hour ABP							
Staessen, 1997	Control	143.9 (16.3)			89.7 (11.1)		
	ABP	142.5 (15.5)	2.8	0.02	88.5 (10.4)	1.6	0.03
Daytime ABP							
Staessen,1997	Control	150.7 (16.4)			95.6 (11.5)		
	ABP	148.9 (15.9)	2.6	0.04	93.8 (11.1)	1.5	0.06
Nighttime ABP							
Staessen, 1997	Control	131.4 (18.5)			79.1 (12.5)		
	ABP	129.9 (17.1)	3.5	0.01	78.5 (11.8)	1.9	0.03