

Hypertension Suite of Templates Tutorial

The **Hypertension Suite of Templates** have been designed to make it possible to efficiently and excellently document the proper care of hypertension and to simultaneously provide the opportunity for healthcare providers to improve their understanding of the disease, while evaluating the quality of care they personally give to patients with hypertension. At present, over 50% of the patients who are treated by SETMA have a diagnosis of hypertension making its treatment a key element in our delivery of quality healthcare.

There is no condition which is not worsened by the concomitant presence of hypertension and there are few chronic conditions which are as devastating to the health and well being of a patient as that of elevated blood pressure. Finally, the complexity of the treatment of hypertension is compounded by the fact that so many special cases exist each of which requires different considerations for the proper treatment of high blood pressure.

On the other hand, few chronic conditions offer the promise as does the effective treatment of hypertension. The consequences of untreated hypertension are grave, but the results of effective control of hypertension are gratifying. However, the reality is that the overwhelming majority of patients with hypertension are inadequately treated.

It is for all of these reasons that SETMA's **Hypertension Suite of Templates** not only offers a tool for the documentation of the patient's hypertension treatment but also provides information, insight and algorithms for the analysis of a patient's blood pressure treatment and control in:

- The evaluation of secondary hypertension
- The presence of Dippers and Non-Dippers
- White Coat Syndrome and its cardiovascular risk
- Diabetes
- Depression
- The elderly
- Insulin Resistance
- Isolated Systolic Blood Pressure
- Kidney Disease
- Medication selection in dozens of comorbid conditions

The following is not only an explanation of how to use **SETMA's Hypertension Suite of Templates**, but it is also a structure for logically approaching the treatment of hypertension along with a wealth of information and insight about that treatment.

The Hypertension Suite of Templates can be accessed from:

AAA Home



Patient Sex Age DOB
Home Phone Work Phone
Patient's Code Status

[SETMA's LESS Initiative](#) [Preventing Diabetes](#) [Preventing Hypertension](#) [Medical Home Coordination](#)
[Charge Posting Tutorial](#) [ICD-9 Code Tutorial](#) [E&M Coding Recommendations](#) ***Needs Attention!!***

[Master GP](#) [Nursing Home](#) [Ophthalmology](#) [Pediatrics](#) [Physical Therapy](#) [Podiatry](#) [Rheumatology](#)
[Daily Progress](#) [Admission Orders](#) [Discharge](#) [Insulin Infusion](#) [Colorectal Surgery](#) [Pain Management](#)

[Exercise](#) [CHF Exercise](#) [Diabetic Exercise](#) [Drug Interactions](#) [Smoking Cessation](#)
[Hydration](#) [Nutrition](#) [Guidelines](#) [Lab Future](#) [Lab Results](#)

Disease Management

[Acute Coronary Syn](#) [Angina](#) [Asthma](#) [CHF](#) [Diabetes](#) [Headaches](#) [Hypertension](#) [Lipids](#) [Cardiometabolic Risk Syndrome](#)
[Weight Management](#) [Renal Failure](#) [Diabetes Edu](#)

Patient's Pharmacy

Phone
Fax

Pending Referrals

Status	Priority	Referral	Referring Provider
Completed	Routine	Test	Abbas

Archived Referrals - Do not use for new referrals

[Referral History](#)

Status	Priority	Referral	Referring Provider

Chart Note

Main Tool Bar

SOUTHEAST TEXAS MEDICAL ASSOCIATES

Patient: RichmondPROX Ztest Sex: M Age: 35 DOB: 05/23/1974
 Home Phone: () - vWork Phone: () -
 Patient's Code Status:

[SETMA's LESS Initiative](#) | [Preventing Diabetes](#) | [Preventing Hypertension](#) | [Medical Home Coordination](#)
[Charge Posting Tutorial](#) | [ICD-9 Code Tutorial](#) | [ESM Coding Recommendations](#) **Needs Attention!!**

[Master GP](#) | [Nursing Home](#) | [Ophthalmology](#) | [Pediatrics](#) | [Physical Therapy](#) | [Podiatry](#) | [Rheumatology](#)
[Daily Progress](#) | [Admission Orders](#) | [Discharge](#) | [Insulin Infusion](#) | [Colorectal Surgery](#) | [Pain Management](#) |

[Exercise](#) | [CHF Exercise](#) | [Diabetic Exercise](#) | [Drug Interactions](#) | [Smoking Cessation](#) |
[Hydration](#) | [Nutrition](#) | [Guidelines](#) | [Lab Future](#) | [Lab Results](#) |

Disease Management
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[Weight Management](#) | [Renal Failure](#) | [Diabetes Edu](#)

Patient's Pharmacy
 Phone: () -
 Fax: () -

Rx Sheet - Active
 Rx Sheet - New
 Rx Sheet - Complete
 Home Health

Pending Referrals | [Referral History](#)

Status	Priority	Referral	Referring Provider
Completed	Routine	Test	Abbas

Chart Note
 Return Info
 Return Doc
 Email
 Telephone
 Records Request
 Transfer of Care Doc

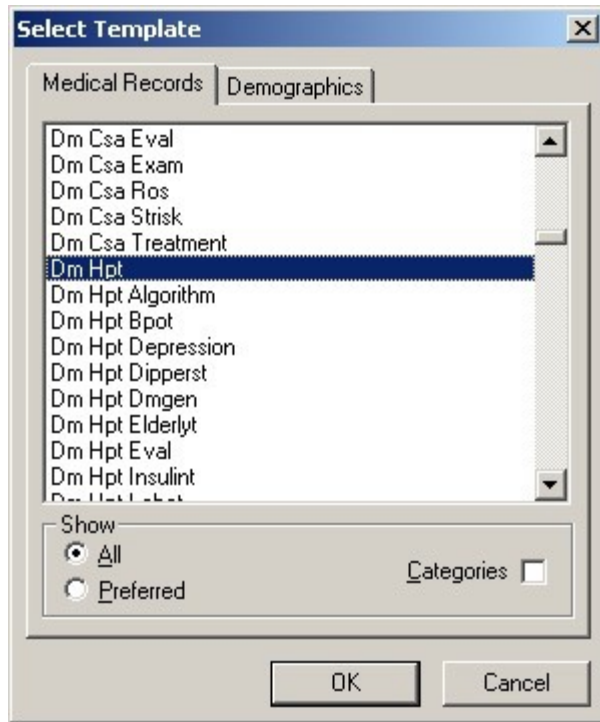
Archived Referrals - Do not use for new referrals | [Referral History](#)

Status	Priority	Referral	Referring Provider
--------	----------	----------	--------------------

File Explorer:
 12/01/2009 02:39 PM Holly, J
 AAA Home
 Histories
 Imhopi
 Master Gp
 12/01/2009 01:42 PM Holly, J
 Dm Lipids
 Dm Metabolic
 Dm SynX
 Dm SynX Dlrquiz
 Dm SynX Insulin
 Dm SynX Lc
 Dm SynX Lcrecs
 Dm SynX Progress
 Dm SynX Sympquiz
 SynX - Coagulation and Fib
 SynX - Fibrinolytic Pathway
 SynX - hsCRPb
 SynX - MI
 SynX - Treatment
 SynX - Uric Acid
 11/30/2009 09:24 AM Holly, J
 AAA Home

☐ My Practice
 Custom

- When the Template button is clicked you will be presented with the preference list.
- If the Hypertension Master Template is listed as one of your preferences, select it.
- If it is not one of your preferences, select the All radio button and then scroll down until you find it in the list.



NOTE: For more on how to set up your preferences, [Click Here](#)

Other Disease Management Tools Hyperlinks

The **Master Hypertension Template** provides the entry point into the management of hypertension

Information at the top of the Master Hypertension Template

- Title
- **Guidelines** - this is a hyperlink which launches a list of General Hypertension Guidelines about blood pressure management. These are listed below.

Hypertension Management

Guidelines

Beginning Blood Pressure
 / /

Highest Blood Pressure
 / /

Patient

Age Sex

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HPT and Depression

HPT and the Elderly

HPT, Insulin Resistance

Isolated Systolic HPT

HPT and Kidney Disease

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Vital Signs

Blood Pressure / /

Pulse Pressure 0

Trial 1 / /

Trial 2 / /

Trial 3 / /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

Ratio .00

[Fram CVD 10-Yr Risk](#) %

[Fram Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#) .0

[Metabolic Syndrome](#) - ☐ ☒ ☐

Vitals Over Time

Major Risk Factors

☒ Tobacco Use

☐ Dyslipidemia

☐ Diabetes Mellitus

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

Calculate Assessment

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Labs Over Time

Hypertension Guidelines

- In persons older than 50, systolic blood pressure (BP) of more than 140 mm Hg is a much more important cardiovascular disease (CVD) risk factor than diastolic BP.
- The risk of CVD, beginning at 115/75 mm Hg, doubles with each increment of 20/10 mm Hg.
- Individuals with a systolic BP of 120 to 139 mm Hg or a diastolic BP of 80 to 89 mm Hg should be considered as prehypertensive and encouraged to adopt health-promoting lifestyle modifications such as weight reduction, dietary sodium reduction, and regular physical activity.
- Thiazide type diuretics should be prescribed for most patients with uncomplicated hypertension, either alone or combined with drugs from other classes.
- Most patients with hypertension require 2 or more antihypertensive medications to achieve BP 140/90 mm Hg, or < 130/80 mm Hg for patients with diabetes or chronic kidney disease.
- If BP is more than 20/10 mm Hg above goal BP, consideration should be given to initiating therapy with 2 agents, 1 of which usually should be thiazide-type diuretic.

OK

Cancel

- The **General Hypertension Guidelines** provide the imperative for effective blood pressure control. The **Guidelines** state:
 - In persons older than 50, systolic blood pressure (BP) of more than 140 mm Hg is a much more important cardiovascular disease (CVD) risk factor than diastolic BP.
 - The risk of CVD, beginning at 115/75 mm Hg, doubles with each increment of 20/10 mm Hg.
 - Individuals with a systolic BP of 120 to 139 mm Hg or a diastolic BP of 80 to 89 mm Hg should be considered as pre-hypertensive and encouraged to adopt health-promoting lifestyle modifications such as weight reduction, dietary sodium reduction, and regular physical activity.
 - Thiazide type diuretics should be prescribed for most patients with uncomplicated hypertension, either alone or combined with drugs from other classes.
 - Most patients with hypertension require 2 or more antihypertensive medications to achieve BP 140/90 mm Hg, or < 130/80 mm Hg for patients with diabetes or chronic kidney disease.
 - If BP is more than 20/10 mm Hg above goal BP, consideration should be given to initiating therapy with 2 agents, 1 of which usually should be thiazide-type diuretic.
- Patient Name, Age, Sex

Hypertension Management

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Patient
Age **Sex**

Beginning Blood Pressure
 /

Highest Blood Pressure
 /

Vital Signs
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 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
 Ratio .00
[Fram CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#) .0
[Metabolic Syndrome](#) - ☐ ☒ + ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female
Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
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Vitals Over Time

- **Beginning Blood Pressure** - this is the blood pressure from the first visit when the Master Hypertension Template was accessed, not the blood pressure from the first time the patient was seen by a SETMA Provider.

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Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 /
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 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
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[Fram CVD 10-Yr Risk](#) %
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[Metabolic Syndrome](#) - ☐ ☒ ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

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- **Highest Blood Pressure** - this is the highest blood pressure measured at a time when the Master Hypertension Template was accessed. If a higher blood pressure was recorded on a patient when the Master Hypertension Template was not accessed, it will not be recorded here.

Hypertension Management

[Guidelines](#)

Patient:

Age: Sex:

Beginning Blood Pressure: / /

Highest Blood Pressure: / /

Vital Signs

Blood Pressure: Trial 1 / Trial 2 / Trial 3 /

Pulse Pressure:

Pulse:

Height: inches

Weight: pounds

BMI:

Body Fat: %

Waist: inches

Hips: inches

Ratio:

[Fram CVD 10-Yr Risk](#) %

[Fram. Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

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Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

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Beneath the above information, the remainder of the **Hypertension Master Template** is organized into four columns:

Column 1 -

Vital signs

- Blood Pressure
 1. Trial 1
 2. Trial 2
 3. Trial 3
- Pulse
- Height
- Weight
- BMI
- Body Fat
- Waist
- Hips
- Ratio

Hypertension Management

[Guidelines](#)

Beginning Blood Pressure

/ /

Highest Blood Pressure

/ /

Vital Signs

Blood Pressure [Pulse Pressure](#)

Trial 1

/

0

Trial 2

/

Trial 3

/

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

Ratio

.00

[Fram CVD 10-Yr Risk](#) %

[Fram Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

.0

[Metabolic Syndrome](#) - ☐ ☒ ☐

[Vitals Over Time](#)

Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

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Fram CVD 10-Yr Risk - this is a hyperlink which takes you to the **Framingham Risk Template** where the **Cardiovascular and Stroke Risk** are calculated from the Framingham Data and where the **Global Cardio Risk** is also calculated. The results of all three are displayed here. This enables a provider to address the cardiovascular and cerebrovascular risk burden carried by the patient and thus to design a treatment program based on that risk.

Hypertension Management

[Guidelines](#)

Patient
Test
Dummy

Age
Sex
M

Beginning Blood Pressure
/ / 0 / 0

Highest Blood Pressure
/ / 0 / 0

Vital Signs

Blood Pressure
Trial 1 /
Trial 2 /
Trial 3 /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

Ratio

[Fram. CVD 10-Yr Risk](#) %

[Fram. Str. 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - +

Vitals Over Time

Major Risk Factors

☒ Tobacco Use

☒ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease
☐ Male < 55
☐ Female < 65

Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

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Framingham Cardiovascular Risk Assessment

Last Updated/Reviewed 12/01/2009

Date of Birth 05/23/1974 Sex M

Return

Summary

Stroke Risk Factor Prediction

The Stroke Risk Factor Prediction is for male and female patients between the ages of 54 and 86 with SBP ranges Male: 95-213, Female: 95-204

Age	35	Pts.	0
SBP		Pts.	
HYP RX		Pts.	
Diabetes		Pts.	
CIGS		Pts.	
CVD		Pts.	
AF		Pts.	
LVH		Pts.	

Calc. 10 Yr. Risk

Import from Physical Exam

Global Cardio Risk

.0 points

Coronary Heart Disease Risk Factor Prediction

The CHD Risk Factor Prediction is for patients between the ages of 20 and 80. The algorithm assesses the patient's 10 Year CHD risk based on age, systolic blood pressure, HDL cholesterol, total cholesterol, Diabetes, smoking, and LVH.

Age	35	Pts.	-4
SBP		Pts.	
<input type="checkbox"/> treated <input type="checkbox"/> untreated			
HDL - C:		Pts.	
Total - C:		Pts.	
Diabetes		Pts.	
CIGS		Pts.	
LVH		Pts.	

Calc. Risk

Point Total

10 Year Risk Percent

Interpretation

Key For Symbols

SBP - Systolic blood Pressure

HYP RX - Under anti-hypertensive therapy

Diabetes - History of diabetes

CIGS - Smokes cigarettes

CVD - History of myocardial infarction, angina pectoris, coronary insufficiency, intermittent claudication or congestive heart failure

AF - History of atrial fibrillation

LVH - Left ventricular hypertrophy on ECG

HDL-C = HDL-Cholesterol

Total - C = Total Cholesterol

Fram. Stroke 10-Yr Risk - same as above.

Hypertension Management

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Patient

Age Sex

Beginning Blood Pressure

/

Highest Blood Pressure

/

Vital Signs

Blood Pressure [Pulse Pressure](#)

Trial 1 /
Trial 2 /
Trial 3 /

Pulse
Height inches
Weight pounds
BMI
Body Fat %
Waist inches
Hips inches
[Ratio](#)

[Fram CVD 10-Yr Risk](#) %

[Fram. Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - ☐ + ☐

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Major Risk Factors

- ☒ Tobacco Use
- ☒ [Dyslipidemia](#)
- ☒ [Diabetes Mellitus](#)
- Family Hx of CV Disease
 - ☐ Male < 55
 - ☐ Female < 65
- Sex
 - ☒ Male
 - ☐ Postmenopausal Female

Additional Risk Factors

- ☐ CHF
- ☐ CAD
- ☐ TIA
- ☐ Stroke
- ☐ Peripheral Vascular Disease
- ☐ Renal Insufficiency
- ☐ Retinopathy

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Framingham Cardiovascular Risk Assessment

Last Updated/Reviewed 12/02/2009

Date of Birth 03/25/1970 Sex M

Return

Summary

Stroke Risk Factor Prediction

The Stroke Risk Factor Prediction is for male and female patients between the ages of 54 and 86 with SBP ranges Male: 95-213, Female: 95-204

Coronary Heart Disease Risk Factor Prediction

The CHD Risk Factor Prediction is for patients between the ages of 20 and 80. The algorithm assesses the patient's 10 Year CHD risk based on age, systolic blood pressure, HDL cholesterol, total cholesterol, Diabetes, smoking, and LVH.

Age	39	Pts.	0
SBP		Pts.	
HYP RX		Pts.	
Diabetes	yes	Pts.	2
CIGS	yes	Pts.	3
CVD		Pts.	
AF		Pts.	
LVH	no	Pts.	0

Import from Physical Exam

Global Cardio Risk

1.4 points

Calc. 10 Yr. Risk

Point Total 5

0

Percent

Avg. 10 Yr. Prob. by Age 0

Percent

Age	39	Pts.	-4
SBP		Pts.	
<input type="checkbox"/> treated <input type="checkbox"/> untreated			
HDL - C:		Pts.	2
Total - C:	150	Pts.	0
Diabetes	yes	Pts.	3
CIGS	yes	Pts.	8
LVH	no	Pts.	0

Calc. Risk

Point Total 9

10 Year Risk 5

Percent

Interpretation

Patient is at LOW risk for an MI or Cardiac Death within the next 10 years.

Key For Symbols

SBP - Systolic blood Pressure

HYP RX - Under anti-hypertensive therapy

Diabetes - History of diabetes

CIGS - Smokes cigarettes

CVD - History of myocardial infarction, angina pectoris, coronary insufficiency, intermittent claudication or congestive heart failure

AF - History of atrial fibrillation

LVH - Left ventricular hypertrophy on ECG

HDL-C = HDL-Cholesterol

Total - C = Total Cholesterol

Global Cardio Risk - this is a new risk calculation based on the Framingham data but without the non-modifiable risk factors - age, sex, etc - included in the equation. A score of 4 or more represents an increased cardiovascular risk.

Hypertension Management

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Patient

Age **Sex**

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Highest Blood Pressure
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 Height inches
 Weight pounds
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 Body Fat %
 Waist inches
 Hips inches
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[Fram CVD 10-Yr Risk](#) %
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[Metabolic Syndrome](#) - ☐ + ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
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 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female
Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
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Cardio Globalrisk

Global Cardiovascular Risk Score

Last Updated/Reviewed

/ /

Enter each of the five parameters below and click "Calculate."
You may click "Import" to pull the values in from the physical exam.

Cholesterol

HDL

HgbA1C

Systolic BP

Packs Per Day

Import >>

Calculate >>

.0

points

A Global Cardiovascular Risk Score below 4 is desirable. Above 4, the patient is at increased risk of a cardiovascular event.

Complete Formula

$$\frac{\text{Cholesterol}}{\text{HDL}} + (\text{HgbA1C} - 7.0) + \frac{\text{Systolic BP} - 130}{10} + \text{Packs Per Day}$$

OK

Cancel

Metabolic Syndrome

Hypertension Management

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Patient RichmondPROT Ztest
Age 35 **Sex** M

Beginning Blood Pressure **Highest Blood Pressure**
 / / / /

Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 / 0
 Trial 2 /
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 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
 Ratio .00
[Fram CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#) .0
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Major Risk Factors
☒ Tobacco Use
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 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

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Cardiometabolic Risk Syndrome Assessment

Last Updated/Reviewed
 12/02/2009

WHO Diagnostic Criteria
☐ + ☐ -

ATP III Diagnostic Criteria
☐ + ☐ -

Return

Triglycerides mg/dL
 Central Obesity
 Waist 1234 inches
 Hip 1234 inches
 Ratio 1.00
 BMI mg/m²
 Blood Pressure
 / mmHg
 Glucose Abnormalities
 Fasting mg/dL
 2 Hr GTT mg/dL
 Diabetes + -
 Insulin Resistance + -
 HDL mg/dL
 Microalbuminuria
 Alb/Creat mg/g
 Spot A/C mg/dL

WHO Diagnostic Criteria
 Triglycerides >= 150 mg/dL
 Ratio Men > 0.90
 Women > 0.85
 BMI > 30
 Blood Pressure > 140/90 mmHg
 Glucose Abnormalities Fasting > 110 mg/dL
 2 Hr GTT > 140 mg/dL
 Diabetes
 Insulin Resistance
 HDL Men < 35 mg/dL
 Women < 39 mg/dL
 Microalbuminuria > 30 mg/g
 > 2.9 mg/dL

ATP III Diagnostic Criteria
 Triglycerides >= 150 mg/dL
 Waist Men > 40 inches
 Women > 35 inches
 Blood Pressure > 130/85 mmHg
 Glucose Abnormalities Fasting > 110 mg/dL
 HDL Men < 40 mg/dL
 Women < 50 mg/dL

Minor Features
☐ Pro-inflammatory State: Increased CRP
☐ Polycystic Ovarian Syndrome
☐ Coronary Heart Disease
☐ Small, dense LDL particle size
☐ Increased Apolipoprotein B
☐ Hypercoagulability/Prothrombotic State: Increased fibrinogen and PAI-1.
☐ Vascular Endothelial Dysfunction: The inside of the artery doesn't work correctly.
☐ Microalbuminuria: The kidneys fail and allow protein to go into urine inappropriately.

Vitals over Time - this function displays the vital signs over time. This is a very useful tool to

look at patterns and possible seasonal changes in blood pressure, etc.

Hypertension Management

[Guidelines](#)

Patient

Age **Sex**

Navigation

☒ HPT ☐ General

- [Home](#)
- [Lifestyle Changes](#)
- [Dippers and White Coat](#)
- [HPT and Diabetes](#)
- [HPT and Depression](#)
- [HPT and the Elderly](#)
- [HPT, Insulin Resistance](#)
- [Isolated Systolic HPT](#)
- [HPT and Kidney Disease](#)
- [Evaluation](#)
- [Treatment](#)
- [HPT Plan](#)
- [Physician Role](#)

Patient Information

[Click for Documents](#)

Physician Information

[Classification](#)

[Risk Stratification](#)

Beginning Blood Pressure

/ /

Highest Blood Pressure

/ /

Vital Signs

Blood Pressure [Pulse Pressure](#)

Trial 1 /

Trial 2 /

Trial 3 /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

Ratio

[Fram CVD 10-Yr Risk](#) %

[Fram. Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - ☐ ☒ ☐

Vitals Over Time

Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

[Calculate Assessment](#)

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

[Lab Results](#)

[Labs Over Time](#)

Hypertension

Vital Signs Over Time

Return

	Trial 1		Trial 2		Trial 3						
Visit Date	Average Systolic BP	Average Diastolic BP	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic	Weight	Body Fat %	BMI
12/01/2009 01:42 PM			1234	152345							

Column 2 --

Major Risk Factors (Cardiovascular Disease Risk)

Hypertension Management

[Guidelines](#)

Patient:
Age: Sex:

Beginning Blood Pressure:

Highest Blood Pressure:

Vital Signs

Blood Pressure:

Pulse Pressure:

Trial 1:

Trial 2:

Trial 3:

Pulse:

Height: inches

Weight: pounds

BMI:

Body Fat: %

Waist: inches

Hips: inches

Ratio:

[Fram CVD 10-Yr Risk](#) %

[Fram Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - ☐ ☒ ☐

[Vitals Over Time](#)

Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

[Calculate Assessment](#)

Blood Pressure Classification:

Recommended Follow-Up:

Risk Group:

Treatment Based on Risk Assessment:

[Lab Results](#)

[Labs Over Time](#)

Navigation

☒ HPT ☐ General

[Home](#)

[Lifestyle Changes](#)

[Dippers and White Coat](#)

[HPT and Diabetes](#)

[HPT and Depression](#)

[HPT and the Elderly](#)

[HPT, Insulin Resistance](#)

[Isolated Systolic HPT](#)

[HPT and Kidney Disease](#)

[Evaluation](#)

[Treatment](#)

[HPT Plan](#)

[Physician Role](#)

Patient Information

[Click for Documents](#)

Physician Information

[Classification](#)

[Risk Stratification](#)

- Tobacco Use
- Dyslipidemia

Hypertension Management

[Guidelines](#)

Patient

Age **Sex**

Beginning Blood Pressure
 /

Highest Blood Pressure
 /

Vital Signs
 Blood Pressure
 Trial 1 /
 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
 Ratio .00
[Fram CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#) .0
[Metabolic Syndrome](#) - ☐ ☒ ☐ + ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes mellitus](#)
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female
Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification

 Recommended Follow-Up

 Risk Group

 Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General
Home

Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

Depressing the Dyslipidemia button launches the Lipid Management Suite of Templates beginning with the Master Lipid Management Template. For more information on the Master Lipid Template, [Click Here](#).

SETMA's Lipid Philosophy

Age	35	Sex	M
-----	----	-----	---

Return

12/01/2009

Homocystiene		11
hsCRP		11
Apo A1		
Apo B		
Apo E2		
Apo E4		

20 of 112

- Diabetes Mellitus

Hypertension Management

[Guidelines](#)

Beginning Blood Pressure

/ / 0 / 0

Highest Blood Pressure

/ / 0 / 0

Vital Signs

Blood Pressure

Trial 1 / 0

Trial 2 /

Trial 3 /

Pulse Pressure

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist 1234.1 inches

Hips inches

Ratio .00

[Fram CVD 10-Yr Risk](#) %

[Fram. Stroke 10-Yr Risk](#) 0 %

[Global Cardio Risk](#) .0

[Metabolic Syndrome](#) - +

Vitals Over Time

Major Risk Factors

☒ Tobacco Use

☐ Dyslipidemia

☐ Diabetes Mellitus

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

Calculate Assessment

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

Lab Results

Labs Over Time

Navigation

Return

Lifestyle Changes

Dippers and White Coat

HPT and Diabetes

HPT and Depression

HPT and the Elderly

HPT, Insulin Resistance

Isolated Systolic HPT

HPT and Kidney Disease

Evaluation

Diagnosis and Screening

Treatment

HPT Plan

Physician Role

Patient Information

Click for Documents

Physician Information

[Classification](#)

[Risk Stratification](#)

Depressing the Diabetes Mellitus Button launches the Diabetes Suite of Templates beginning with the Master Diabetes Management Template. For more information on the Master Diabetes Management Template, [Click Here](#).

Diabetes Management

☐ Type I
 ☐ Type II
 ☐ GDM
 ☐ Pre-Diabetes
 ☐ Other
 Diabetic Since (year)

Patient Ztest
 Age Sex

[Diagnostic Criteria](#)
[Screening Criteria](#)
[Imp Diabetes Concepts](#)
[Evidenced-Based Recs](#)

Compliance

[Dental Care](#)
 Dilated Eye Exam
 Flu Shot
 Foot Exam
 HgbA1C
 Pneumovax
 Urinalysis
 Aspirin ☐ Yes ☒ No
 Statin ☐ Yes ☒ No

[Smoker](#) ☐ + ☒ -
[E-mail](#)
[Metabolic Syndrome](#) ☐ + ☒ -
[Fram. CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
[Weight Management](#)
[Hypertension Management](#)
[Lipids Management](#)
[Immunizations](#)

Vital Signs

Height Waist
 Weight Hips
 BMI Chest
 Body Fat % Abdomen
 Protein Req Ratio
 BMR BER

Finger Stick Glucose
 Pulse
[Blood Pressure](#) /
 BP In Diabetics
 Vitals Over Time

Most Recent Labs

[HqA1C](#)
[Mean Plasma Glucose](#)
[C-Peptide](#)
 Fructosamine
 Cholesterol
 LDL
 HDL
 Triglycerides
[Trig/HDL Ratio](#)
 Glucose
 Fasting
 Insulin
[HOMA-IR](#)
 Na
 K
[Magnesium](#)
 BUN
 Creatinine
[U Microalbumin](#)
 Albumin/Creat
 Urinalysis Labs Over Time

Current SQ Insulin Dose as of

Time of day	Units	Type	Units	Type	Blood Sugars mg/dl
<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text" value=".00"/>	<input type="text"/>	<input type="text"/>

Diary

Navigation

☒ Diabetes
 ☐ General

Home

Education Booklet Given On

 Last DE

- Family History of CV Disease
 - Male < 55
 - Female < 65
- Sex
 - Male
 - Postmenopausal Female

Hypertension Management

[Guidelines](#)

Patient
Age **Sex**

Beginning Blood Pressure / /
Highest Blood Pressure / /

Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 / /
 Trial 2 / /
 Trial 3 / /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
[Ratio](#)
[Fram CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
[Metabolic Syndrome](#) - ☐ ☐ ☐

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
☐ Family Hx of CV Disease
 ☐ Male < 55
 ☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification
 Recommended Follow-Up
 Risk Group
 Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General
Home
 Lifestyle Changes
 Dippers and White Coat
 HPT and Diabetes
 HPT and Depression
 HPT and the Elderly
 HPT, Insulin Resistance
 Isolated Systolic HPT
 HPT and Kidney Disease
 Evaluation
 Diagnosis and Screening
 Treatment
 HPT Plan
 Physician Role
Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

Additional Risk Factors -- The presence of any of these risk factors increases the cardiovascular risk burden carried by a patient and therefore increases the imperative for lowering the blood pressure.

- CHF
- CAD
- TIA
- Stroke
- Peripheral Vascular Disease
- Renal Insufficiency
- Retinopathy

Hypertension Management

[Guidelines](#)

Patient
Age **Sex**

Beginning Blood Pressure / /
Highest Blood Pressure / /

Vital Signs
 Blood Pressure / [Pulse Pressure](#)
 Trial 1 /
 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
[Ratio](#)
 Fram.CVD 10-Yr Risk %
[Fram.Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
 Metabolic Syndrome - ☐ + ☐

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General

Home
[Lifestyle Changes](#)
[Dippers and White Coat](#)
[HPT and Diabetes](#)
[HPT and Depression](#)
[HPT and the Elderly](#)
[HPT, Insulin Resistance](#)
[Isolated Systolic HPT](#)
[HPT and Kidney Disease](#)
[Evaluation](#)
[Diagnosis and Screening](#)
[Treatment](#)
[HPT Plan](#)
[Physician Role](#)

Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

Column 3 -

Calculate Assessment - when this button is depressed the following calculations are automatically made and displayed in the boxes named **hypertension classification**, **recommended follow-up**, **risk group** and **treatment recommendation** based on this risk assessment.

- **Blood Pressure Classification** - This indicate the risk associated with certain levels of blood pressure.
- **Recommended Follow-up** - This indicates how soon the patient should be seen for this blood pressure classification.
- **Risk Group** - This classification provides a risk stratification for determining the treatment of the patient. The Risk Group is determined by the factors listed in the document entitled "Risk Stratification" which is launched from the button of that name at the bottom right of this template.
- **Treatment Based on Risk Assessment** - Based on the Risk Group identified above, a treatment plan will be displayed. This will range from lifestyle modifications to drug therapy.

Note: For details see the **Risk Stratification** section below.

Hypertension Management

[Guidelines](#)

Beginning Blood Pressure

/ /

Highest Blood Pressure

/ /

Vital Signs

Blood Pressure [Pulse Pressure](#)

Trial 1 /

Trial 2 /

Trial 3 /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

[Ratio](#)

[Fram CVD 10-Yr Risk](#) %

[Fram Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - ☐ ☐ ☐

[Vitals Over Time](#)

Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

Navigation

☒ HPT ☐ General

Home

[Lifestyle Changes](#)

[Dippers and White Coat](#)

[HPT and Diabetes](#)

[HPT and Depression](#)

[HPT and the Elderly](#)

[HPT, Insulin Resistance](#)

[Isolated Systolic HPT](#)

[HPT and Kidney Disease](#)

[Evaluation](#)

[Diagnosis and Screening](#)

[Treatment](#)

[HPT Plan](#)

[Physician Role](#)

Patient Information

[Click for Documents](#)

Physician Information

[Classification](#)

[Risk Stratification](#)

[Calculate Assessment](#)

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

[Lab Results](#)

[Labs Over Time](#)

Lab Results - when this button is depressed, a pop-up is launched which has the following laboratory values displayed.

- Na
- K
- BUN
- Creatinine
- Ca
- Mg
- **Ca/Mg** - this ratio reflects the possible presence of a prothrombotic condition in a patient. Calcium promotes blood clotting, while Magnesium inhibits platelet aggregation. If the Ca/Mg ratio is above 5, the patient is likely to have a prothrombotic condition. This ratio is most often regulated by increasing the Magnesium level rather than decreasing the Calcium levels in the blood.
- Glucose
- Fasting Glucose
- Insulin
- **HOMA-IR** - Homeostasis Model Assessment of Insulin Resistance. This is a calculated value based on the fasting plasma glucose and the fasting insulin. The calculation is done automatically when these two values are present in NextGen's laboratory module. If this value is greater than 2, the patient is insulin resistant.
- MS Strip

- **Microalbumin** - as with diabetic nephropathy, so with hypertensive renal disease, urinary protein is the earliest indicator of renal damage.
- **Uric Acid** - increased uric acid is associated with a prothrombic state as well.
- Cholesterol
- HDL
- LDL
- Triglycerides
- **Trig/HDL** - if this ratio is over 2, the patient is probably insulin resistant.

The screenshot shows the 'Hypertension Management' interface. At the top left is the title 'Hypertension Management' with a 'Guidelines' link. Patient information at the top right includes 'Patient' (RichmondPROL), 'Ztest', 'Age' (35), and 'Sex' (M). Below this are input fields for 'Beginning Blood Pressure' and 'Highest Blood Pressure', each with a format of ' / / ' 0 ' / ' 0. A 'Vital Signs' section on the left includes input fields for Blood Pressure (Trial 1, 2, 3), Pulse Pressure, Pulse, Height, Weight, BMI, Body Fat, Waist, Hips, and a Ratio field. A 'Major Risk Factors' section includes checkboxes for Tobacco Use, Dyslipidemia, Diabetes Mellitus, Family Hx of CV Disease, Sex (Male, Female < 65), and Postmenopausal Female. An 'Additional Risk Factors' section includes checkboxes for CHF, CAD, TIA, Stroke, Peripheral Vascular Disease, Renal Insufficiency, and Retinopathy. On the right, a 'Navigation' sidebar lists various options: Home, Lifestyle Changes, Dippers and White Coat, HPT and Diabetes, HPT and Depression, HPT and the Elderly, HPT, Insulin Resistance, Isolated Systolic HPT, HPT and Kidney Disease, Evaluation, Diagnosis and Screening, Treatment, HPT Plan, and Physician Role. Below the sidebar are sections for 'Patient Information' (Click for Documents) and 'Physician Information' (Classification, Risk Stratification). In the center, there are buttons for 'Calculate Assessment', 'Blood Pressure Classification', 'Recommended Follow-Up', 'Risk Group', and 'Treatment Based on Risk Assessment'. At the bottom, there are buttons for 'Lab Results' (highlighted with a red box) and 'Labs Over Time'. A 'Vitals Over Time' button is located at the bottom left.

Labs Over Time - when this button is depressed, the "Hypertension Labs Over Time" template is launched.

Hypertension Labs Over Time												Return
Encounter Date:Time	Na	K	BUN	Creatinine	Ca	Mg	Ca/Mg	Glucose	Fasting Glucose	Insulin	HOMA IR	MS SI

27 of 112

Navigation Buttons - there are two lists of navigation buttons which are displayed depending upon which of two boxes are checked:

- HPT
- General

Below are listed the templates which are displayed when each is checked in turn:

HPT - if this box is checked the templates which are specific to the disease management of the patient with hypertension are displayed:

- Home
- Lifestyle Changes
- Dippers and White Coat
- HPT and Diabetes
- HPT and Depression
- HPT and the Elderly
- HPT, Insulin Resistance
- Isolated Systolic HPT
- HPT and Kidney Disease
- Evaluation
- Diagnosis and Screening
- Treatment
- HPT Plan
- Physician Role

Hypertension Management

[Guidelines](#)

Patient
Age **Sex**

Beginning Blood Pressure
Highest Blood Pressure

Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 /
 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
[Ratio](#)
[Fram CVD 10-Yr Risk](#) %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
[Metabolic Syndrome](#) - ☐ ☒ ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification

 Recommended Follow-Up

 Risk Group

 Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General

Home
[Lifestyle Changes](#)
[Dippers and White Coat](#)
[HPT and Diabetes](#)
[HPT and Depression](#)
[HPT and the Elderly](#)
[HPT, Insulin Resistance](#)
[Isolated Systolic HPT](#)
[HPT and Kidney Disease](#)
[Evaluation](#)
[Diagnosis and Screening](#)
[Treatment](#)
[HPT Plan](#)
[Physician Role](#)

Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

General - if this box is checked the templates which are drawn from the Master GP Suite of templates are displayed. Their use with the Hypertension Suite allows a patient's entire encounter to be documented from this suite, if no other issues are being addressed in this encounter.

- Return
- Chief/Chronic
- HPI
- Histories
- System Review
- Physical Exam

Hypertension Management

[Guidelines](#)

Patient RichmondPROI Ztest

Age 35
 Sex M

Beginning Blood Pressure
 / / 0 / 0

Highest Blood Pressure
 / / 0 / 0

Vital Signs

Blood Pressure

Trial 1 /
 Trial 2 /
 Trial 3 /

Pulse Pressure
 Trial 1 0
 Trial 2
 Trial 3

Pulse
 inches
Height
 pounds
Weight
 inches
BMI
 %
Body Fat
 inches
Waist 1234.1
 inches
Hips
 inches
Ratio .00

Fram.CVD 10-Yr Risk %
Fram. Stroke 10-Yr Risk 0 %
Global Cardio Risk .0
Metabolic Syndrome - +

Vitals Over Time

Major Risk Factors

☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors

☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification
Recommended Follow-Up
Risk Group
Treatment Based on Risk Assessment

Navigation

☐ HPT
 ☒ General

Return
 Chief/Chronic
 HPI
 Histories
 System Review
 Physical Exam

Patient Information
Click for Documents

Physician Information
[Classification](#)
[Risk Stratification](#)

Beneath the navigation buttons are several patient information documents. When the button entitled "**click for documents**" is depressed the following list of documents appears.

Hypertension Management

[Guidelines](#)

Patient
Age **Sex**

Beginning Blood Pressure / /
Highest Blood Pressure / /

Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 / /
 Trial 2 / /
 Trial 3 / /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
[Ratio](#)
 Fram.CVD 10-Yr Risk %
[Fram.Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
[Metabolic Syndrome](#) - ☐ ☒ ☐

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification

 Recommended Follow-Up

 Risk Group

 Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General
Home
 Lifestyle Changes
 Dippers and White Coat
 HPT and Diabetes
 HPT and Depression
 HPT and the Elderly
 HPT, Insulin Resistance
 Isolated Systolic HPT
 HPT and Kidney Disease
 Evaluation
 Diagnosis and Screening
 Treatment
 HPT Plan
 Physician Role
Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

The **first twelve** can be printed as a group and the **last five** can be printed as a group or they can be printed one at a time by following the instructions given.

1. General Information
2. What is High Blood Pressure?
3. How is High Blood Pressure Treated?
4. Is Your Blood Pressure too High?
5. Living with High Blood Pressure
6. Factors That Affect Blood Pressure
7. What Happens When BP is Too High?
8. Frequently Asked Questions About BP
9. What Can You Do to Control BP?
10. How Do Doctors Choose BP Medications?
11. Why is BP Control Important?
12. What Causes High Blood Pressure

The function entitled "**Print Next 12 (auto-print)**" prints the above 12 documents

Dm Hpt Ptdoc

Patient Information

Select the document that you would like to view and click OK.

☐ General Information ☐ Print Next 12 (Auto-Print)

☐ What is High Blood Pressure?

☐ How is High Blood Pressure Treated?

☐ Is Your Blood Pressure Too High?

☐ Living With High Blood Pressure

☐ Factors That Affect Blood Pressure

☐ What Happens When BP Is Too High?

☐ Frequently Asked Questions About BP

☐ What Can You Do To Control BP?

☐ How Do Doctors Choose BP Medications?

☐ Why Is BP Control Important?

☐ What Causes High Blood Pressure?

Hypertension Articles (Your Life, Your Health)

☐ Part I ☐ Part IV ☐ Print Next 5 (Auto-Print)

☐ Part II ☐ Part V

☐ Part III

OK Cancel

Hypertension Articles (Your Life, Your Health)

1. Part I
2. Part II
3. Part III
4. Part IV
5. Part V

The function entitled "**Print Next 5 (auto print)**" prints these five articles.

Dm Hpt Ptdoc

Patient Information

Select the document that you would like to view and click OK.

☐ General Information ☐ Print Next 12 (Auto-Print)

☐ What is High Blood Pressure?

☐ How is High Blood Pressure Treated?

☐ Is Your Blood Pressure Too High?

☐ Living With High Blood Pressure

☐ Factors That Affect Blood Pressure

☐ What Happens When BP Is Too High?

☐ Frequently Asked Questions About BP

☐ What Can You Do To Control BP?

☐ How Do Doctors Choose BP Medications?

☐ Why Is BP Control Important?

☐ What Causes High Blood Pressure?

Hypertension Articles (Your Life, Your Health)

☐ Part I ☐ Part IV ☐ Print Next 5 (Auto-Print)

☐ Part II ☐ Part V

☐ Part III

OK Cancel

Physician Information - This is beneath the Patient Information function described above.

- **Classification** - this displays a table with the blood pressure classifications which are automatically calculated as described above.

Hypertension Management

[Guidelines](#)

Patient
RichmondPROI
Ztest

Age
35
Sex
M

Beginning Blood Pressure

/ /
0
/
0

Highest Blood Pressure

/ /
0
/
0

Vital Signs

Blood Pressure

Trial 1
/
Trial 2
/
Trial 3

Pulse

Height
inches
Weight
pounds
BMI
Body Fat
%
Waist
1234.1
inches
Hips
inches
Ratio
.00

[Fram CVD 10-Yr Risk](#)
%
[Fram Stroke 10-Yr Risk](#)
%
[Global Cardio Risk](#)
%

Metabolic Syndrome
-
+

Vitals Over Time

Major Risk Factors

☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors

☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

Lab Results

Labs Over Time

Navigation

☒ HPT
☐ General

- Home
- Lifestyle Changes
- Dippers and White Coat
- HPT and Diabetes
- HPT and Depression
- HPT and the Elderly
- HPT, Insulin Resistance
- Isolated Systolic HPT
- HPT and Kidney Disease
- Evaluation
- Diagnosis and Screening
- Treatment
- HPT Plan
- Physician Role

Patient Information

Click for Documents

Physician Information

[Classification](#)
[Risk Stratification](#)



SETMA I - 2929 Calder, Suite 100
 SETMA II - 3570 College, Suite 200
 SETMA West - 2010 Dowlen
 (409) 833-9797
www.setma.com

Classification of Blood Pressure Adults > 18 Years of Age

<u>Category</u>	<u>Systolic (mmHg)</u>		<u>Diastolic (mmHg)</u>
Optimal	< 120	and	< 80
Pre-Hypertension	121 - 130	or	81 - 85
High	131 - 139	or	86 - 89
Hypertension			
Stage 1	140 - 159	or	90 - 99
Stage 2	160 - 179	or	100 - 109
Stage 3	> 179	or	> 109

- **Risk Stratification** - this launches a document with a table which shows the calculation of the Risk Categories. In addition the following information is given:

Hypertension Management

[Guidelines](#)

Beginning Blood Pressure

/ / 0 / 0

Highest Blood Pressure

/ / 0 / 0

Vital Signs

Blood Pressure

Trial 1 / / 0

Trial 2 / /

Trial 3 / /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist 123.4 inches

Hips inches

Ratio .00

[Fram CVD 10-Yr Risk](#) %

[Fram Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#) %

[Metabolic Syndrome](#) - +

[Vitals Over Time](#)

Major Risk Factors

☒ Tobacco Use

☐ Dyslipidemia

☐ Diabetes Mellitus

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

[Calculate Assessment](#)

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

[Lab Results](#)

[Labs Over Time](#)

Navigation

☒ HPT ☐ General

Home

Lifestyle Changes

Dippers and White Coat

HPT and Diabetes

HPT and Depression

HPT and the Elderly

HPT, Insulin Resistance

Isolated Systolic HPT

HPT and Kidney Disease

Evaluation

Diagnosis and Screening

Treatment

HPT Plan

Physician Role

Patient Information

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Physician Information

[Classification](#)

[Risk Stratification](#)

Partial Sample

Hypertension Risk Stratification

Your Blood Pressure	Your Risk Group (See Below)		
	Risk Group A	Risk Group B	Risk Group C
130-139/85-89 high-normal		Lifestyle Modification	Drug therapy
140-159/90-99 (called stage 1 hypertension)		Lifestyle Modification (up to 12 months)	Drug therapy (up to 6 months)
> or = 160/> or = 100 (Called stages 2 & 3 hypertension)	Drug Therapy	Drug Therapy	Drug therapy

1. Risk Group A

- a. No Risk Factors
- b. No Target Organ Damage
- c. No clinical cardiovascular disease

2. Risk Group B

- a. At least 1 risk factor, not including Diabetes
- b. No target organ damage
- c. No clinical cardiovascular disease

3. Risk Group C

- a. Target organ damage/clinical cardiovascular disease and/or Diabetes
- b. Other Risk Factors

4. Risk Factors

- a. Tobacco use
- b. Dyslipidemia,
- c. Diabetes Mellitus,
- d. Sex (male and postmenopausal women),
- e. Family history of cardiovascular disease

5. Target Organ Damage -

- a. LVH,
- b. CHF,
- c. CAD,
- d. Stroke,
- e. TIA,
- f. Peripheral Vascular Disease,
- g. Renal Insufficiency,
- h. Retinopathy

Lifestyle Changes Template

Hypertension Management
Guidelines

Patient: RichmondPRO, Ztest
Age: 35, Sex: M

Beginning Blood Pressure: / / 0 / 0
Highest Blood Pressure: / / 0 / 0

Vital Signs
Blood Pressure: Trial 1 / / 0, Trial 2 / / , Trial 3 / /
Pulse: /
Height: / inches
Weight: / pounds
BMI: /
Body Fat: / %
Waist: 1234.1 inches
Hips: / inches
Ratio: .00
Fram CVD 10-Yr Risk: / %
Fram Stroke 10-Yr Risk: 0 %
Global Cardio Risk: .0
Metabolic Syndrome: - +

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex: ☒ Male, ☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification: /
Recommended Follow-Up: /
Risk Group: /
Treatment Based on Risk Assessment: /

Lab Results
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Physician Role

Patient Information
Click for Documents

Physician Information
Classification
Risk Stratification

Lifestyle changes are the foundation of the treatment of virtually any chronic disease. On this template there are **12 Recommended Actions** for the control and improvement of hypertension through lifestyle changes. The following describes how this template works.

- The 12 Recommended Actions are auto checked as they apply to anyone with hypertension or pre-hypertension.
- When this template is accessed, these recommended actions will appear on the **Hypertension Follow-up Note** which should be given to the patient each time they are treated or assessed for hypertension.
- The material described below on a **Low Sodium Diet** and the **DASH Diet** also automatically print with the **Hypertension Follow-up Note**.
- Those actions which have a proven effect on hypertension have a notation concerning the degree of improvement in systolic blood pressure which can be reasonably expected from that lifestyle action.
- The Blood Pressure reductions which can reasonably be expected from the 12 Recommended actions are:
 - A 2-4 mmHg lowering from decreasing or eliminating alcohol use.
 - A 5-20 mmHg lowering for every 20 pounds of weight loss.
 - A 4-9 mmHg lowering from exercise

4. A 2-8 mmHg lowering from a reduced salt intake
5. A 8-14 mmHg lowering from following the DASH diet.

Contrast this with the fact that a single medication will generally provide a maximum of a 10 mmHg lowering of the systolic pressure.

Lifestyle Changes

Recommended Actions
The numbers in parenthesis indicate the approximate reduction in Systolic Blood Pressure for each lifestyle change.

[Return](#)

<input checked="" type="checkbox"/> Eliminate or reduce alcohol consumption to 2 drinks per day (2-4 mmHg) <input checked="" type="checkbox"/> Eliminate or reduce caffeine intake <input checked="" type="checkbox"/> Take measures to reduce and control stress <input checked="" type="checkbox"/> If you are overweight, lose weight (5-20 mmHg/20 lb. wt. loss) BMI <input type="text"/> BMR <input type="text"/> calories/day <input checked="" type="checkbox"/> Exercise (4-9 mmHg) <input checked="" type="checkbox"/> Smoking Cessation	<input checked="" type="checkbox"/> Change dietary habits <input checked="" type="checkbox"/> Increase potassium intake <input checked="" type="checkbox"/> Increase calcium intake <input checked="" type="checkbox"/> Maintain adequate magnesium intake <input checked="" type="checkbox"/> Increase fish oils <input checked="" type="checkbox"/> Reduce salt intake to no more than 2.4 grams/day (2-8 mmHg) What Is A Low Sodium Diet? <input checked="" type="checkbox"/> DASH Diet (8-14 mmHg) <input checked="" type="checkbox"/> Monitor your blood pressure and keep a record <input checked="" type="checkbox"/> Be sure to keep all of your appointments <input checked="" type="checkbox"/> Be sure to take your medications as indicated	<p>Information Alcohol, Coffee, Cigarettes</p>
--	--	---

[Email](#)

- The 12 Recommended Actions are:
 1. **Eliminate or reduce alcohol consumption to 1 drink a day** (2 - 4 mmHg)
 2. **Eliminate or reduce caffeine intake.**
 3. **Take measures to reduce and control stress.**
 4. **If you are overweight, lose weight** (5-20 mmHg/20 lb. wt. loss) -- there is also a hyperlink to SETMA's Weight Management Suite of Templates. And, there are boxes where the patient's BMI and BMR are automatically displayed.

Lifestyle Changes

Recommended Actions
The numbers in parenthesis indicate the approximate reduction in Systolic Blood Pressure for each lifestyle change.

[Return](#)

<input checked="" type="checkbox"/> Eliminate or reduce alcohol consumption to 2 drinks per day (2-4 mmHg) <input checked="" type="checkbox"/> Eliminate or reduce caffeine intake <input checked="" type="checkbox"/> Take measures to reduce and control stress <input checked="" type="checkbox"/> If you are overweight, lose weight (5-20 mmHg/20 lb. wt. loss) BMI <input type="text"/> BMR <input type="text"/> calories/day <input checked="" type="checkbox"/> Exercise (4-9 mmHg) <input checked="" type="checkbox"/> Smoking Cessation	<input checked="" type="checkbox"/> Change dietary habits <input checked="" type="checkbox"/> Increase potassium intake <input checked="" type="checkbox"/> Increase calcium intake <input checked="" type="checkbox"/> Maintain adequate magnesium intake <input checked="" type="checkbox"/> Increase fish oils <input checked="" type="checkbox"/> Reduce salt intake to no more than 2.4 grams/day (2-8 mmHg) What Is A Low Sodium Diet? <input checked="" type="checkbox"/> DASH Diet (8-14 mmHg) <input checked="" type="checkbox"/> Monitor your blood pressure and keep a record <input checked="" type="checkbox"/> Be sure to keep all of your appointments <input checked="" type="checkbox"/> Be sure to take your medications as indicated	<p>Information Alcohol, Coffee, Cigarettes</p>
--	--	---

[Email](#)

Weight Management

Patient RichmondPROI Ztest

Age 35 **Sex** M

[Edit Program](#)

Risk Factors

Cardiovascular

☐ Hypertension

☐ Congestive Heart Failure

☐ Cor pulmonale

☐ Varicose Veins

☐ Pulmonary Embolism

☐ Coronary Artery Disease

Endocrine

☐ [Metabolic Syndrome](#)

☐ Type II Diabetes

☐ Dyslipidemia

Gastrointestinal

☐ Gastroesophageal Reflux Disease (GERD)

☐ Non-Alcoholic Fatty Liver

☐ Cholelithiasis

☐ Hernias

☐ Colon Cancer

Genitourinary

☐ Urinary Stress Incontinence

☐ Obesity-Related Glomerulopathy

☐ Hypogonadism (male)

Integumentary

☐ Striae Distensae (Stretch Marks)

☐ Status Pigmentation of Legs

☐ Lymphedema

☐ Cellulitis

☐ Intertrigo, Carbuncles

☐ Acanthosis Nigricans, Skin Tags

Musculoskeletal

☐ Hyperuricemia and Gout

☐ Immobility

☐ Osteoarthritis (Knees, Hips)

☐ Low Back Pain

Neurologic

☐ Stroke

☐ Idiopathic Intracranial Hypertension

☐ [Meralgia Paresthetica](#)

Psychological

☐ Depression/Low Self Esteem

☐ Body Image Disturbance

☐ Social Stigmatization

Respiratory

☐ Dyspnea

☐ Obstructive Sleep Apnea

☐ Hypoventilation Syndrome

☐ Pickwickian Syndrome

☐ Asthma

Height in

Weight lbs

Waist 1234.00 in

Hips 1234.00 in

[Neck](#) in

Blood Pressure /

[Risk Ratio](#) .00

[Body Fat](#) %

Protein Req g/day

[BMR](#) cal/day

[BMI](#)

Disease Risk Level [Calc](#)

Assessment [Calc](#)

Treatment [Calc](#)

[Print Assessment](#)

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[WMM Definitions](#)

[Body Composition](#)

[Health and Hope](#)

[Childhood Nutrition](#)

[Medicine, Myths, and Magic](#)

[Principles of Weight Loss](#)

5. **Exercise** (4-9 mmHg) - there is also a hyperlink to SETMA's Exercise template. For more information on the Exercise Prescription template, [Click Here](#)

Lifestyle Changes

Recommended Actions

The numbers in parenthesis indicate the approximate reduction in Systolic Blood Pressure for each lifestyle change.

☒ Eliminate or reduce alcohol consumption to 2 drinks per day (2-4 mmHg)

☒ Eliminate or reduce caffeine intake

☒ Take measures to reduce and control stress

☒ If you are overweight, [lose weight](#) (5-20 mmHg/20 lb wt. loss)

BMI

BMR calories/day

☒ [Exercise](#) (4-9 mmHg)

☒ [Smoking Cessation](#)

☒ Change dietary habits

☒ Increase potassium intake

☒ Increase calcium intake

☒ Maintain adequate magnesium intake

☒ Increase fish oils

☒ Reduce salt intake to no more than 2.4 grams/day (2-8 mmHg) [What Is A Low Sodium Diet?](#)

☒ [DASH Diet](#) (8-14 mmHg)

☒ Monitor your blood pressure and keep a record

☒ Be sure to keep all of your appointments

☒ Be sure to take your medications as indicated

[Email](#)

[Return](#)

Information

[Alcohol, Coffee, Cigarettes](#)

Red = Required Field

Exercise Assessment

Current Exercise Activity

Running/Walking/Jogging [Calories](#)

Distance in Miles

Minutes Exercised

Times per Week

Units per Session

Units per Week

Outdoor Cycling

Distance in Miles

Minutes Exercised

Aerobic Units

Swimming

Distance in Yards

Minutes Exercised

Aerobic Units

Tennis

☐ Singles ☐ Doubles

Minutes Exercised

Aerobic Units

Rowing

Rate of 20 strokes per minute

Minutes Exercised

Aerobic Units

Golf

Walking and Carrying Bag

Holes Played

Aerobic Units

☐ **Exercise Prescription**

☐ Running/Walking/Jogging

☐ Outdoor Cycling

☐ Swimming

☐ Tennis

☐ Rowing

Target Heart Rate

Resting Heart Rate

Max Heart Rate

Heart Rate Reserve

Target Heart Rate Range to bpm

Help Information
(Automatically Prints)

A Healthy Woman

Any Exercise Better than None

BMR -- Changing It

BMR Information

Body, Mind, and Emotions

Exercise and Weight Loss

Fitness and Fat

Getting Started

Getting Started Part II

Getting Started Part III

Training for Health

Women and Heart Disease

Weekly Recommendations

Fitness Classification	Men	Women
Very Poor	less than 10	less than 8
Poor	10-20	8-15
Fair	21-31	16-26
Good	32-50	27-40
Excellent	51-74	41-64
Superior	75+	65+

6. **Smoking Cessation** - there is also a hyperlink to SETMA's Smoking Cessation Template and a button which launches an email for the creation of an electronic tickler file.

Lifestyle Changes

Recommended Actions

The numbers in parenthesis indicate the approximate reduction in Systolic Blood Pressure for each lifestyle change.

☒ Eliminate or reduce alcohol consumption to 2 drinks per day (2-4 mmHg)

☒ Eliminate or reduce caffeine intake

☒ Take measures to reduce and control stress

☒ If you are overweight, [lose weight](#) (5-20 mmHg/20 lb wt. loss)

BMI

BMR calories/day

☒ [Exercise](#) (4-9 mmHg)

☒ [Smoking Cessation](#)

☒ Change dietary habits

☒ Increase potassium intake

☒ Increase calcium intake

☒ Maintain adequate magnesium intake

☒ Increase fish oils

☒ Reduce salt intake to no more than 2.4 grams/day (2-8 mmHg) [What Is A Low Sodium Diet?](#)

☒ [DASH Diet](#) (8-14 mmHg)

☒ Monitor your blood pressure and keep a record

☒ Be sure to keep all of your appointments

☒ Be sure to take your medications as indicated

Information

[Alcohol, Coffee, Cigarettes](#)

Red = Required Field

Smoking Cessation

Last Chest X-Ray

Patient currently smokes? ☐ Yes ☒ No

Check here if patient has quit!! ☐

Pipe? ☐ Yes ☒ No

Smokeless Tobacco? ☐ Yes ☒ No

Date stopped smoking?

Packs per day? Years?

Patient exposed to second hand smoke at home or work? ☐ Yes ☒ No

Has the patient committed to quit? ☐ Yes ☒ No

On what date did they commit?

What is the goal stop date?

Ask ☐ At every visit, ask all patients about tobacco use, and document their response.

☐ Patients who have never used tobacco or who stopped using it years ago do not need repeated assessments.

Advise ☐ Let patients know, in a clear, strong, and personalized manner, that you urge them to quit.

Men who smoke cut their lives short by 13.2 years
Women smokers lose 14.5 years of life

Assess ☐ Find out whether patients are willing to quit now or at least within the next 30 days.

Assist ☐ Help patients plan to quit by...

☐ setting a date

☐ reviewing past attempts to quit

☐ providing practical counseling

☐ Prescribe pharmacotherapy.

☐ Provide educational materials on smoking cessation.

☐ anticipating challenges such as [nicotine withdrawal symptoms](#)

☐ urging total abstinence

Arrange Follow-Up ☐ Smokers trying to quit are at high risk of relapse, particularly during the first 2 weeks after the quit date. Follow up in person or by telephone during this time.

[Email Ticker File](#) Scheduled Date?

Return

Pharmacotherapy

Document

Information

[General Information](#)

[Process of Quitting Smoking](#)

[Second Hand Smoke](#)

7. Change Dietary habits

- a. Increase potassium intake
- b. Increase calcium intake
- c. Maintain adequate magnesium intake
- d. Increase fish oils

8. **Reduce Salt intake to no more than 2.4 grams/day (2-8 mmHg)** - there is also a printable document entitled What is a low Sodium Diet?
9. **DASH Diet (8-14 mmHg)** - there is also a hyperlink which prints an introduction to the DASH Diet - **Dietary Approach to Stop Hypertension.**
10. Monitor your blood pressure and keep a record
11. Be sure to keep all appointments
12. Be sure to take your medications as indicated.

Information

A patient information document is launched and printed from this template entitled, "**Alcohol, Coffee, Cigarettes.**"

Dippers and White Coat Syndrome Template

The concepts of "dipping," "non-dipping," and "white coat syndrome" are very important to the proper evaluation and treatment of hypertension. The frequent reviewing of the information on this template will help keep these principles in mind as patients are evaluated for decreasing their stroke risk.

Hypertension Management
[Guidelines](#)

Patient: RichmondPROL Ztest
 Age: 35 Sex: M

Beginning Blood Pressure: / / 0 / 0
 Highest Blood Pressure: / / 0 / 0

Vital Signs
 Blood Pressure: Trial 1 / Trial 2 / Trial 3
 Pulse: /
 Height: / inches
 Weight: / pounds
 BMI: /
 Body Fat: / %
 Waist: 1234.1 inches
 Hips: / inches
 Ratio: .00

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification: /
 Recommended Follow-Up: /
 Risk Group: /
 Treatment Based on Risk Assessment: /

Lab Results
 Labs Over Time

Navigation
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 Isolated Systolic HPT
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 Physician Role

Patient Information
 Click for Documents

Physician Information
[Classification](#)
[Risk Stratification](#)

From CVD 10-Yr Risk: / %
 Fram. Stroke 10-Yr Risk: 0 %
 Global Cardio Risk: .0
 Metabolic Syndrome: - ☐ ☐ ☐
 Vitals Over Time

There are four pop-ups on this template.

- **Dippers and Non-Dippers** - this addresses the very important physiological decreasing of blood pressure in the early morning hours. There three educational documents associated with this phenomenon: **Circadian Rhythms**, **General Information**, **Dippers and Sodium Shifts**. The pop-up displays the following information:
 1. **Circadian Rhythms** -- Blood pressure and heart rate tend to be lowest between 2-4 AM. Levels begin to increase after that and before awakening.
 2. **Dipping** -- The characteristic decrease in blood pressure at night.
 3. **Non-Dippers** -- Some patients do not have this characteristic reduction in blood pressure at night. This has been described consistently in African-Americans with hypertension and in diabetics.
 4. **Risk**
 - a. Non-dipping appears to increase cardiovascular risk.
 - b. CV risk is most closely correlated with total 24-hour pressure load.
 - c. When the pressure "dips" at night, the overall blood pressure load is reduced.
 - d. For non-dippers, the overall blood pressure load is not decreased, thus increasing cardiovascular risk.

5. Other Rhythms with CV Risk

- a. Cortisol and catecholamine release tend to be the highest in the morning.
- b. Norepinephrine surges around awakening and corresponds to the abrupt increase in BP and heart rate.
- c. Peripheral resistance increases in the morning, increasing myocardial work and myocardial oxygen demand, which undoubtedly relate to cardiovascular events.

6. Non-Dippers at Higher Risk

- a. Non-dippers have higher levels of clotting factor fibrinogen.
- b. Non-dippers had a 21-mg/dl higher fibrinogen level over a year than dippers.
- c. A 75 mg/dl increase in fibrinogen translates to an 85 percent increased risk for coronary events and death.

7. Practical Implications

- a. BP control during the day is not enough.
- b. With short acting BP drugs, the impression that the patient's BP is under control, when in reality, the patient has been converted from a dipper to a non-dipper.
- c. Non-dippers are at as much risk for BP related disease as untreated hypertension.
- d. Patients need to be treated with 24-hours medications or they will require more than one dose of medication a day so they can maintain their physiologic droop.
- e. Example of true 24-hour medications are: Norvasc, Micardis, Altace, Mavik

Dippers and White Coat Syndrome

Return

Dippers and Non-Dippers

[Circadian Rhythms](#)
[General Information](#)
[Dippers and Sodium Shifts](#)

Dm Hpt Dippers

Dippers and Non-Dippers

Circadian Rhythms

Blood pressure and heart rate tend to be lowest between 2-4 AM. Levels begin to increase after that and before awakening.

Dipping

The characteristic decrease in blood pressure at night.

Non-Dippers

Some patients do not have this characteristic reduction in blood pressure at night. This has been described consistently in African-Americans with hypertension and in diabetics.

Risk

Non-dipping appears to increase cardiovascular risk. CV risk is most closely correlated with total 24-hour pressure load. When the pressure "dips" at night, the overall blood pressure load is reduced. For non-dippers, the overall blood pressure load is not decreased, thus increasing cardiovascular risk.

Other Rhythms with CV Risk

- Cortisol and catecholamine release tend to be the highest in the morning.
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- Peripheral resistance increases in the morning, increasing myocardial work and myocardial oxygen demand, which undoubtedly relate to cardiovascular events.

Non-Dippers at Higher Risk

- Non-dippers have higher levels of clotting factor fibrinogen.
- Non-dippers had a 21-mg/dl higher fibrinogen level over a year than dippers.
- A 75 mg/dl increase in fibrinogen translates to an 85 percent increased risk for coronary events and death.

Practical Implications

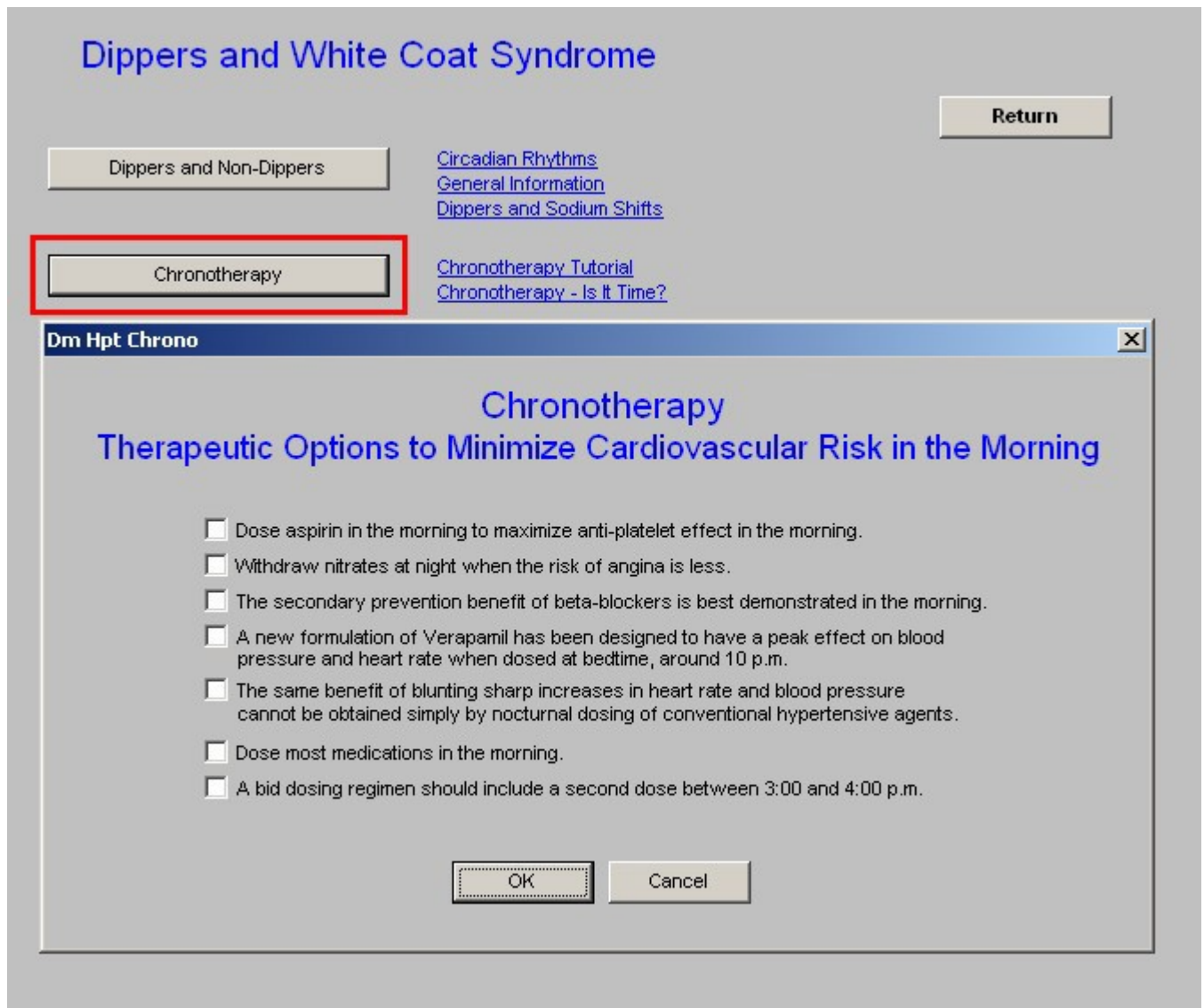
- BP control during the day is not enough.
- With short acting BP drugs, the impression that the patient's BP is under control, when in reality, the patient has been converted from a dipper to a non-dipper.
- Non-dippers are at as much risk for BP related disease as untreated hypertension.
- **Patients need to be treated with 24-hours medications or they will require more than one dose of medication a day so they can maintain their physiologic droop.**
- Example of true 24-hour medications are: Norvasc, Micardis, Altace, Mavik

OK

Cancel

- **Chronotherapy** - the subtitle of this pop-up is "**Therapeutic Options to Minimize Cardiovascular Risk.**" The seven facts about the "timing" of medication administration to improve its beneficial effects is an introduction to the large field of chronotherapy. This pop-up has two documents associated with it: **Chronotherapy: A Tutorial** and **Chronotherapy: Is it Time?**
 1. Chronotherapy
 2. Therapeutic Options to Minimize Cardiovascular Risk in the Morning
 - a. Dose aspirin in the morning to maximize anti-platelet effect in the morning.
 - b. Withdraw nitrates at night when the risk of angina is less.
 - c. The secondary prevention benefit of beta-blockers is best demonstrated in the morning.

- d. A new formulation of Verapamil has been designed to have a peak effect on blood pressure and heart rate when dosed at bedtime, around 10 p.m.
- e. The same benefit of blunting sharp increases in heart rate and blood pressure cannot be obtained simply by nocturnal dosing of conventional hypertensive agents.
- f. Dose most medications in the morning.
- g. A bid dosing regimen should include a second dose between 3:00 and 4:00 p.m.



- **Ambulatory BP Monitoring** - the following information appears on this pop-up. Two documents are associated with this pop-up: **Ambulatory Monitoring Review and Prognostic Value**.

Overall, studies indicate that ABP monitoring is particularly valuable to refine

cardiovascular risk stratification in untreated subjects with office hypertension and in those with resistant hypertension. Intervention studies targeted at ABP are now needed.

1. Clinical Indications for Ambulatory Blood Pressure Monitoring
2. To rule out suspected office hypertension (i.e., white-coat hypertension)
3. To evaluate borderline hypertension with end-organ damage
4. To investigate labile/paroxysmal hypertension
5. To evaluate symptoms possibly related to blood pressure fluctuations (especially orthostasis)
6. To evaluate orthostatic hypotension, autonomic neuropathy, and carotid sinus syncope
7. To follow up adequacy of antihypertensive therapy

Dippers and White Coat Syndrome

Dippers and Non-Dippers

[Circadian Rhythms](#)
[General Information](#)
[Dippers and Sodium Shifts](#)

Chronotherapy

[Chronotherapy Tutorial](#)
[Chronotherapy - Is It Time?](#)

Ambulatory BP Monitoring

[Ambulatory Monitoring Review](#)
[Prognostic Value](#)

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Dm Hpt Abp

Ambulatory Blood Pressure Monitoring

Overall, studies indicate that ABP monitoring is particularly valuable to refine cardiovascular risk stratification in untreated subjects with office hypertension and in those with resistant hypertension. Intervention studies targeted at ABP are now needed.

Clinical Indications for Ambulatory Blood Pressure Monitoring

- To rule out suspected office hypertension (i.e., white-coat hypertension)
- To evaluate borderline hypertension with end-organ damage
- To investigate labile/paroxysmal hypertension
- To evaluate symptoms possibly related to blood pressure fluctuations (especially orthostasis)
- To evaluate orthostatic hypotension, autonomic neuropathy, and carotid sinus syncope
- To follow up adequacy of antihypertensive therapy

OK

Cancel

- **White Coat Syndrome** - the following information appears on this pop-up which is associated with a document entitled, **General Information**. Healthcare providers are cautioned about dismissing patients with "white coat syndrome" as it increases cardiovascular risk.
 1. Both white coat and sustained hypertensive subjects already suffered impaired glucose tolerance (1.70 vs 1.96), higher fasting triglyceride levels and higher office BP compared to normotensives.
 2. They caution doctors against dismissing white coat hypertension in their patients, and recommend that they treat it as a sign of other serious medical complications that require diagnosis and early treatment.

- 16th Annual Scientific Meeting of the American Society of Hypertension

3. White coat hypertension (WCH) is defined as the observation of high blood pressure (BP) levels in the doctors office and normal BP during ambulatory monitoring.
4. The presence of endothelial dysfunction (ED) among white coat hypertension (WCH) subjects -- as evidenced by urine protein excretion -- in the same degree as in sustained essential hypertension (SEH) subjects, suggests that this group of patients has early atherosclerosis and therefore increased cardiovascular risk.
5. Results support previous works that found organic damage in WCH, and they are consistent with the higher cardiovascular morbidity and progression to SEH that have been found in this group of patients. Because several pharmacological therapies have been shown to improve ED in SEH patients, patients with WCH might benefit from pharmacological treatment to improve ED and therefore prevent early atherosclerosis.

The following two are check boxes for further evaluation of the patient with suspicion of WCS:

- White Coat Syndrome present based on ambulatory blood pressure monitoring.
- Check for urinary albumin excretion.

Dippers and White Coat Syndrome

[Return](#)

Dippers and Non-Dippers

[Circadian Rhythms](#)
[General Information](#)
[Dippers and Sodium Shifts](#)

Chronotherapy

[Chronotherapy Tutorial](#)
[Chronotherapy - Is It Time?](#)

Ambulatory BP Monitoring

[Ambulatory Monitoring Review](#)
[Prognostic Value](#)

White Coat Syndrome

[General Information](#)

Dm Hpt Whitecoat

White Coat Syndrome

Both white coat and sustained hypertensive subjects already suffered impaired glucose tolerance (1.70 vs 1.96), higher fasting triglyceride levels and higher office BP compared to normotensives.

They caution doctors against dismissing white coat hypertension in their patients, and recommend that they treat it as a sign of other serious medical complications that require diagnosis and early treatment.

- 16th Annual Scientific Meeting of the American Society of Hypertension

White coat hypertension (WCH) is defined as the observation of high blood pressure (BP) levels in the doctors office and normal BP during ambulatory monitoring.

The presence of endothelial dysfunction (ED) among white coat hypertension (WCH) subjects -- as evidenced by urine protein excretion -- in the same degree as in sustained essential hypertension (SEH) subjects, suggests that this group of patients has early atherosclerosis and therefore an increased cardiovascular risk.

Results support previous works that found organic damage in WCH, and they are consistent with the higher cardiovascular morbidity and progression to SEH that have been found in this group of patients. Because several pharmacological therapies have been shown to improve ED in SEH patients, patients with WCH might benefit from pharmacological treatment to improve ED and therefore prevent early atherosclerosis.

- ☐ White Coat Syndrome present based on ambulatory blood pressure monitoring.
☐ Check for urinary albumin excretion.

OK

Cancel

Hypertension and Diabetes Template

This template addresses the goals and principles of the treatment of hypertension in the patient with diabetes. Its review and the knowledge and use of the algorithms contained in it are key to the successful treatment of hypertension in the patient with diabetes.

Hypertension Management

[Guidelines](#)

Patient

Age Sex

Beginning Blood Pressure / /

Highest Blood Pressure / /

Vital Signs

Blood Pressure

Trial 1 / /

Trial 2 / /

Trial 3 / /

Pulse

Height inches

Weight pounds

BMI

Body Fat %

Waist inches

Hips inches

Ratio

[Fram CVD 10-Yr Risk](#) %

[Fram. Stroke 10-Yr Risk](#) %

[Global Cardio Risk](#)

[Metabolic Syndrome](#) - ☐ + ☐

[Vitals Over Time](#)

Major Risk Factors

☒ Tobacco Use

☐ [Dyslipidemia](#)

☐ [Diabetes Mellitus](#)

Family Hx of CV Disease

☐ Male < 55

☐ Female < 65

Sex

☒ Male

☐ Postmenopausal Female

Additional Risk Factors

☐ CHF

☐ CAD

☐ TIA

☐ Stroke

☐ Peripheral Vascular Disease

☐ Renal Insufficiency

☐ Retinopathy

[Calculate Assessment](#)

Blood Pressure Classification

[Recommended Follow-Up](#)

[Risk Group](#)

[Treatment Based on Risk Assessment](#)

[Lab Results](#)

[Labs Over Time](#)

Navigation

☒ HPT ☐ General

[Home](#)

[Lifestyle Changes](#)

[Dippers and White Coat](#)

[HPT and Diabetes](#)

[HPT and Depression](#)

[HPT and the Elderly](#)

[HPT, Insulin Resistance](#)

[Isolated Systolic HPT](#)

[HPT and Kidney Disease](#)

[Evaluation](#)

[Diagnosis and Screening](#)

[Treatment](#)

[HPT Plan](#)

[Physician Role](#)

Patient Information

[Click for Documents](#)

Physician Information

[Classification](#)

[Risk Stratification](#)

When the Navigation button entitled HPT and Diabetes is depressed the following template is launched.

Hypertension and Diabetes

GOAL BLOOD PRESSURE FOR DIABETICS

Systolic pressure below 110 mmHg and diastolic pressure below 70 mmHg. May actually benefit from lower pressures.

[Return](#)

General Principles

☐ Hypertension is as important or perhaps a more important risk factor in the development of complications of diabetes as is hyperglycemia.

☐ A 5 mmHg reduction in diastolic pressure produced a 37% reduction in microvascular complications.

☐ Use of an ACE inhibitor or an ARB, or both, seems appropriate initial therapy for the management of hypertension in patients with diabetes.

☐ Systemic hypertension worsens the hemodynamic effects of diabetes on the kidneys and is an important, treatable mediator of progressive renal damage.

☐ 20-60% of diabetics will develop hypertension depending on age, ethnicity, and fat mass.

☐ In type 1 diabetes, hypertension appears to be of renal origin.

☐ In type 2 diabetes, hypertension is often present as part of the metabolic syndrome of insulin resistance where hyperinsulinemia may play an important role.

[HPT and ACE Inhibitors](#)

[Choosing A Drug](#)

[Treatment Algorithm](#)

- Goal - 110/70 mm Hg
- **General Principles**
 1. Hypertension is as important or perhaps a more important risk factor in the development of complications of diabetes as is hyperglycemia.
 2. A 5 mmHg reduction in diastolic pressure produced a 37% reduction in microvascular complications.
 3. Use of an ACE inhibitor or ARB, or both, seems appropriate initial therapy for the management of hypertension in patients with diabetes.
 4. Systemic hypertension worsens the hemodynamic effects of diabetes on the kidneys and is an important, treatable mediator of progressive renal damage.
 5. 20-60% of diabetics will develop hypertension depending on age, ethnicity, and fat mass.
 6. In type 1 diabetes, hypertension appears to be of renal origin.
 7. In type 2 diabetes, hypertension is often present as part of the metabolic syndrome of insulin resistance where hyperinsulinemia may play an important role.

Three pop-ups appear on this template; they are:

- **HPT and Ace Inhibitors - this pop-up displays the following information**

Treatment Goals for Diabetics

1. ACE inhibitors and ARBs can modify the progression of diabetic kidney disease, even in normotensive patients:
 - a. ACE inhibitors reduced the risk of progression from microalbuminuria to macroalbuminuria by 62%.
 - b. Regression to normoalbuminuria was 3 times greater in the treated patients than in control patients.
 - c. ACE inhibitors and ARBs form the mainstay of hypertension control and renoprotection in diabetes.
 - d. The ACE or ARB should be "pushed" to the dose at which microalbuminuria is eliminated or the maximum medication dose is reached, or side effects of the ACE, or ARB appear.
 - e. If the maximum dose of ACE is reached, add an ARB as they act on different levels of the angiotensin system.
2. Hypertensive treatment in the diabetic must be aggressive:
 - a. The treatment goal is 130/80.
 - b. In patients with proteinuria and impaired renal function the goal is 125/75.

Hypertension and Diabetes

GOAL BLOOD PRESSURE FOR DIABETICS

Systolic pressure below 110 mmHg and diastolic pressure below 70 mmHg. May actually benefit from lower pressures.

Return

General Principles

- ☐ Hypertension is as important or perhaps a more important risk factor in the development of complications of diabetes as is hyperglycemia.
- ☐ A 5 mmHg reduction in microvascular c
- ☐ Use of an ACE inhibitor therapy for the m
- ☐ Systemic hypertension in diabetes on the kidney progressive renal
- ☐ 20-60% of diabetic ethnicity, and fat r
- ☐ In type 1 diabetes
- ☐ In type 2 diabetes metabolic syndrome may play an impor

HPT and ACE Inhibitors

Dm Hpt Dmtp

Hypertension Treatment Goals for Diabetics

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 - c. ACE inhibitors and ARBs form the mainstay of hypertension control and renoprotection in diabetes.
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2. Hypertensive treatment in the diabetic must be aggressive:
 - a. The treatment goal is 130/80.
 - b. In patients with proteinuria and impaired renal function the goal is 125/75.

OK

Cancel

- **Choosing a Drug - this pop-up displays the following information on five classes of antihypertensive medications:**

1. ACE Inhibitors

- a. Renal protective. Diminish proteinuria.
- b. Increase responsiveness to insulin.
- c. No adverse effect on lipids.
- d. May cause increase in potassium.

2. Calcium Channel Blockers

- a. Diltiazem & verapamil decrease proteinuria.
- b. Long term effect on renal function not known.
- c. No adverse effect on lipid or carbohydrate metabolism.

3. Low Dose thiazide/hydrochlorothiazide (12.5 to 25 mg max)

- a. Low dose minimizes adverse effects on lipids and glucose utilization.
- b. Reverses mild volume expansion.
- c. May be particularly on African-American patients.

4. Peripheral Alpha Blockers

May be useful in special situations: lowers BP, increases insulin sensitivity, modestly lower lipid levels

5. Beta Blockers

- Mask early symptoms of hypoglycemia.
- Non selective beta-blockers slow rate of recovery from Hypoglycemia.
- May worsen clinical manifestations of peripheral vascular disease.

Hypertension and Diabetes

GOAL BLOOD PRESSURE FOR DIABETICS
Systolic pressure below 110 mmHg and diastolic pressure below 70 mmHg. May actually benefit from lower pressures.

Return

General Principles

- ☐ Hypertension is as important or perhaps a more important risk factor in the development of complications of diabetes as is hyperglycemia.
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- ☐ Use of an ACE therapy for the
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- ☐ In type 1 diabetes
- ☐ In type 2 diabetes metabolic syndrome may play an im

HPT and ACE Inhibitors

Choosing A Drug

Dm Hpt Dmcd2

Choosing a Drug for Diabetics

ACE Inhibitors
Renal protective. Diminish proteinuria.
Increase responsiveness to insulin.
No adverse effect on lipids.
May cause increase in potassium.

Calcium Channel Blockers
Diltiazem & verapamil decrease proteinuria.
Long term effect on renal function not known.
No adverse effect on lipid or carbohydrate metabolism.

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Low dose minimizes adverse effects on lipids and glucose utilization.
Reverses mild volume expansion.
May be particularly on African-American patients.

Peripheral Alpha Blockers
May be useful in special situations: lowers BP, increases insulin sensitivity, modestly lower lipid levels

Beta Blockers
Mask early symptoms of hypoglycemia.
Non selective beta-blockers slow rate of recovery from hypoglycemia.
May worsen clinical manifestations of peripheral vascular disease.

OK **Cancel**

- Treatment Algorithm** - this pop-up displays information, "Hypertension: Choosing A Drug for Diabetic Patients."

- **First Choice is an ACE-Inhibitor** - there is a check box for selecting that option.
- **After that**

Thiazide Diuretics - there is a check box

Beta Blockers - there is a check box

ARBs - there is a check box

NOTE: Blood Pressure goal is 110/70 mmHg.

- **Steps of treatment of hypertension in patients with diabetes**
 - a. **Begin with lifestyle modifications including diet and exercise**
 - If necessary, start on an ACE Inhibitor/ARB with Diuretic
 - Thiazide if Creatinine less than 1.8
 - Loop Diuretic if Creatinine greater than 1.8
 - BP Goal Attained? Yes? Stop; No? Proceed
 - b. **Add a long-acting nondihydropyridine Calcium Channel Blocker**
such as Amlodipine or Norvasc
 - BP Goal Attained? Yes? Stop; No? Proceed
 - c. **What is the patient's resting pulse? If above 84 -**
 - Add a Beta Blocker; if BP goal still not attained, refer to a hypertension specialist.
 - What is the patient's resting pulse? If below 84 -**
 - Add another subgroup of Calcium Channel Blockers. If BP still not attained, refer to a hypertension specialist.

Hypertension and Diabetes

GOAL BLOOD PRESSURE FOR DIABETICS

Systolic pressure below 110 mmHg and diastolic pressure below 70 mmHg. May actually benefit from lower pressures.

General Principles

- ☐ Hypertension is as important or perhaps a more important risk factor in the development of complications of diabetes as is hyperglycemia.
- ☐ A 5 mmHg reduction in diastolic pressure produced a 37% reduction in microvascular complications.
- ☐ Use of an ACE inhibitor or an ARB, or both, seems appropriate initial therapy for the management of hypertension in patients with diabetes.
- ☐ Systemic hypertension in patients with diabetes is associated with progressive renal disease.
- ☐ 20-60% of diabetic patients have hypertension, and the prevalence increases with ethnicity, and fat mass.
- ☐ In type 1 diabetes, hypertension is associated with a higher risk of complications.
- ☐ In type 2 diabetes, hypertension is associated with a higher risk of complications.

Dm Hpt Dcd X

Hypertension

Choosing a Drug for Diabetic Patients

☐ First choice is an ACE Inhibitor

After that ☐ Thiazide Diuretics
☐ Beta Blockers
☐ ARBs

Blood pressure goal is 110/70 mmHg.

1. Begin with lifestyle modifications including diet and exercise.

If necessary, start on an ACE Inhibitor/ARB with Diuretic

Thiazide if Creatinine less than 1.8

Loop Diuretic if Creatinine greater than 1.8

BP Goal Attained? ☐ Yes ☐ No

Hypertension and Depression Template

This template addresses the relationship between both conditions and between the impact which the treatment of one can have on the other. The treatment of hypertension in the elderly is often complicated by the presence of depression particularly since the medications for both conditions often interact with one another.

Hypertension Management
Guidelines

Patient: RichmondPROI Ztest
Age: 35 Sex: M

Beginning Blood Pressure: / / 0 / 0
Highest Blood Pressure: / / 0 / 0

Vital Signs
Blood Pressure: Trial 1 / / Trial 2 / / Trial 3 / /
Pulse Pressure: 0
Pulse: /
Height: / inches
Weight: / pounds
BMI: /
Body Fat: / %
Waist: 1234.1 inches
Hips: / inches
Ratio: .00
Fram CVD 10-Yr Risk: / %
Fram. Stroke 10-Yr Risk: 0 %
Global Cardio Risk: .0
Metabolic Syndrome: - +

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment
Blood Pressure Classification: /
Recommended Follow-Up: /
Risk Group: /
Treatment Based on Risk Assessment: /

Lab Results
Labs Over Time

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Lifestyle Changes
Dippers and White Coat
HPT and Diabetes
HPT and Depression
HPT and the Elderly
HPT, Insulin Resistance
Isolated Systolic HPT
HPT and Kidney Disease
Evaluation
Diagnosis and Screening
Treatment
HPT Plan
Physician Role

Patient Information
Click for Documents

Physician Information
Classification
Risk Stratification

There are three sections to the information on this template:

- **Depression As A Risk Factor for Hypertension**
 1. Dual Risk of Depression and HPT
 2. Mechanisms of Depression Causing HPT

High depression scores are an independent predictor of hypertension

3. Vigilance about the coexistence of depression and hypertension is particularly important in:
 - a. Elderly patients
 - b. Women
 - c. Separate or divorced persons
 - d. Those with a family history of depression

Hypertension and Depression

Depression As A Risk Factor For Hypertension

[Dual Risk of Depression and HPT](#)

[Mechanisms of Depression Causing HPT](#)

High depression scores are an independent predictor of hypertension:

- * In white adults aged 45 to 64, with a relative risk of hypertension of 1.80.
- * In African-American adults aged 25 to 64, with a relative risk of hypertension of 2.99.

Vigilance about the coexistence of depression and hypertension is particularly important in groups at high risk of depression:

- * Elderly persons
- * Women
- * Separated or divorced persons
- * Those with a family history of depression.

[Return](#)

Antihypertensive Drugs Can Worsen Depression

A link between antihypertensive medications and depression has been suspected for more than four decades.

[Antihypertensive Medications Causing Depression](#)

[Interactions Between Antihypertensives and Antidepressants](#)

Lifestyle aspects which may worsen depression and hypertension are...

- ☐ Smoking
- ☐ Alcohol
- ☐ Inactivity
- ☐ Poor Diet

- **Antihypertensive Drugs Can Worsen Depression**

1. A link between antihypertensive medications and depression has been suspected for more than four decades.
2. Antihypertensive Medications Causing Depression
3. Interactions Between Antihypertensives and Antidepressants

Hypertension and Depression

Depression As A Risk Factor For Hypertension

[Return](#)

[Dual Risk of Depression and HPT](#)

[Mechanisms of Depression Causing HPT](#)

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- **Lifestyle Aspects Which May Worsen Depression and Hypertension**
 1. Smoking
 2. Alcohol
 3. Inactivity
 4. Poor Diet

Hypertension and Depression

Depression As A Risk Factor For Hypertension

[Return](#)

[Dual Risk of Depression and HPT](#)

[Mechanisms of Depression Causing HPT](#)

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Antihypertensive Drugs Can Worsen Depression

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[Antihypertensive Medications Causing Depression](#)

[Interactions Between Antihypertensives and Antidepressants](#)

Lifestyle aspects which may worsen depression and hypertension are...

- ☐ Smoking
- ☒ Alcohol
- ☐ Inactivity
- ☐ Poor Diet

Hypertension and the Elderly Template

Hypertension Management
[Guidelines](#)

Patient: RichmondPROI Ztest
Age: 35 Sex: M

Beginning Blood Pressure: / / 0 / 0
Highest Blood Pressure: / / 0 / 0

Vital Signs
Blood Pressure: Trial 1 / Trial 2 / Trial 3
Pulse Pressure: 0
Pulse: /
Height: / inches
Weight: / pounds
BMI: /
Body Fat: %
Waist: 1234.1 inches
Hips: / inches
Ratio: .00

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment
Blood Pressure Classification
Recommended Follow-Up
Risk Group
Treatment Based on Risk Assessment

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HPT and the Elderly
HPT, Insulin Resistance
Isolated Systolic HPT
HPT and Kidney Disease
Evaluation
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Treatment
HPT Plan
Physician Role

Patient Information
Click for Documents

Physician Information
[Classification](#)
[Risk Stratification](#)

From CVD 10-Yr Risk: %
From Stroke 10-Yr Risk: 0 %
Global Cardio Risk: .0
Metabolic Syndrome: - +
Vitals Over Time

Lab Results
Labs Over Time

Blood pressure is a significant problem in the elderly, particularly when you realized that if you are 55 years of age and do not have hypertension, your lifetime risk of developing hypertension is 90%.. Controlling blood pressure, and particularly systolic blood pressure in the elderly, even those beyond 80 will decrease morbidity and mortality for cerebrovascular accidents and myocardial infarctions.

Hypertension in the Elderly

[Treatment Algorithm](#) [JNC7 Treatment Recommendations](#) [Therapy Comparisons](#)

[Return](#)

General Principles

- Antihypertensive therapy has been shown to reduce morbidity and mortality in older patients with elevated systolic or diastolic blood pressures.
- This benefit appears to persist in patients older than 80 years, but less than one third of older patients have adequate blood pressure control.
- Systolic blood pressure is the most important predictor of cardiovascular disease.
- Blood pressure measurement in older persons should include an evaluation for orthostatic hypotension.
- Low-dose thiazide diuretics remain first-line therapy for older patients.
- Beta blockers, angiotensin-converting enzyme inhibitors, angiotensin-receptor blockers, and calcium channel blockers are second-line medications that should be selected based on comorbidities and risk factors.

Treatment Goals

- The goal blood pressure recommended by JNC7 is
 - * less than 140/90 mmHg
 - * less than 120/70 mmHg in patients with diabetes or chronic kidney disease
- JNC7 recommends treating older patients with stage 1 isolated systolic hypertension (SBP between 140 and 159 mmHg) equally aggressively.
- Active treatment has been shown to reduce
 - * total mortality
 - * cardiovascular mortality
 - * fatal or nonfatal cardiovascular events
 - * fatal or nonfatal stroke

[The Elderly & Thiazide Diuretics](#)

[The Elderly & Beta Blockers](#)

[The Elderly & Calcium Channel Blockers](#)

[The Elderly & ACE Inhibitors and ARBs](#)

Information

[Morning Blood Pressure](#)

There are three pop-ups at the top of this template; they are:

- **Treatment Algorithm** - this pop-up displays the following information

Treatment of Elderly Patients with Hypertension

1. In older patients with hypertension, morning blood pressure is the best predictor for stroke.
2. Hypertension in the morning hours is a strong, independent predictor of future stroke events.
3. Each 10 mm Hg increase in morning blood pressure is associated with a 44% increase in the risk of stroke.
4. The difference between morning and evening blood pressure was also independently associated with stroke risk, with each 10 mm Hg increase associated with a 24% increase in risk.
5. **Sustained Hypertension defined:** -- Average morning-to-evening blood pressure of 135 mm Hg or greater and a difference between morning and evening of less than 20 mm Hg
6. **Morning Hypertension defined:** -- Average of 135 mm Hg or greater and a morning to evening difference of more than 20 mm Hg. At this point on the Treatment of Elderly Patients with Hypertension algorithm there appears a button entitled Calculate.
7. When depressed the **Calculate** button launches a pop-up with the following title **Sustained vs. Morning Hypertension**

- a. Enter the patient's average morning and evening blood pressure and click calculate.
- b. In the box present the conclusion of morning or sustained blood pressure will appear.

A question is then asked: "Does the patient have angina, diabetes mellitus, or heart failure?" Yes/No

1. Check boxes are then provided to guide the following:
 - a. Regular screening of blood pressure should continue until 80.
 - b. Once antihypertensive care has been initiated, it should be continued after the age of 80.
 - c. When hypertension is first diagnosed in those over 80, treatment decisions should be made based on biological rather than chronological age.

Hypertension in the Elderly

[Treatment Algorithm](#) [JNC7 Treatment Recommendations](#) [Therapy Comparisons](#) Return

General Principles

- **Dm Hpt Elderly**
- **Treatment of Elderly Patients With Hypertension**
 - In older patients with hypertension, morning blood pressure is the best predictor for stroke.
 - Hypertension in the morning hours is a strong, independent predictor of future stroke events.
 - Each 10 mm Hg increase in morning blood pressure is associated with a 44% increase in the risk of stroke.
 - The difference between morning and evening blood pressure was also independently associated with stroke risk, with each 10 mm Hg increase associated with a 24 % increase in risk.
 - **Sustained Hypertension defined:**
Average morning-to-evening blood pressure of 135 mm Hg or greater and a difference between morning and evening of less than 20 mm Hg.
 - **Morning Hypertension defined:**
Average of 135 mm Hg or greater and a morning to evening difference of more than 20 mm Hg.

Calculate

Does the patient have Angina, Diabetes Mellitus, or Heart Failure?

☒ Yes ☒ No

☐ Regular screening of blood pressure should continue until 80.

☐ Once antihypertensive care has been initiated, it should be continued after the age of 80.

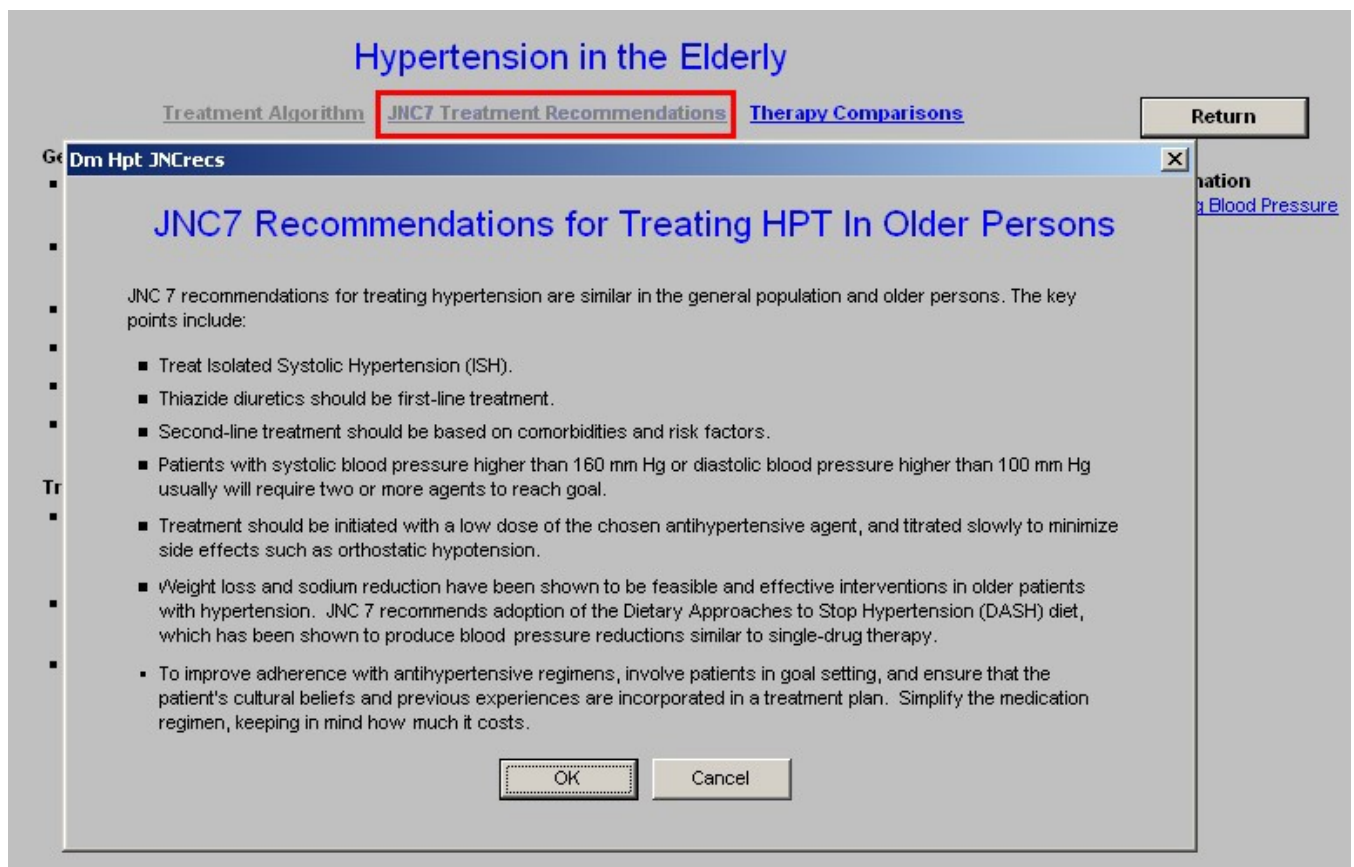
☐ When hypertension is first diagnosed in those over 80, treatment decisions should be made based on biological rather than chronological age.

OK Cancel

- **JNC7 Treatment Recommendations** - this pop-up displays the following principles of the treatment of hypertension in the elderly:

Note: JNC 7 recommendations for treating hypertension are similar in the general population and older persons. The key points include:

1. Treat isolated systolic hypertension
2. Thiazide diuretics should be first-line treatment.
3. Second-line treatment should be based on comorbidities and risk factors.
4. Patients with systolic blood pressure higher than 160 mm Hg or diastolic blood pressure higher than 100 mm Hg usually will require two or more agents to reach goal.
5. Treatment should be initiated with a low dose of the chosen antihypertensive agent, and titrated slowly to minimize side effects such as orthostatic hypotension
6. Weight loss and sodium reduction have been shown to be feasible and effective interventions in older patients with hypertension. JNC 7 recommends adoption of the Dietary Approaches to Stop Hypertension (DASH) diet, which has been shown to produce blood pressure reductions similar to single-drug therapy.
7. To improve adherence with antihypertensive regimens, involve patients in goal setting, and ensure that the patients' cultural beliefs and previous experiences are incorporated in a treatment plan. Simplify the medication regimen, keeping in mind how much it costs.



- **Therapy Comparisons** - this pop-up compares the safety, price and simplicity of use of four classes of medications in the elderly:
 1. Thiazide Diuretics,
 2. Beta Blockers,
 3. ACE Inhibitors and
 4. Calcium Channel Blockers.

Hypertension in the Elderly

[Treatment Algorithm](#)
 [JHIC7 Treatment Recommendations](#)
 [Therapy Comparisons](#)

[Return](#)

Dm Hpt Elderlyrec

Comparison of Antihypertensive Agents in Older Persons

Select a class of medication below to view the available information.

☐ Thiazide Diuretics
 ☐ Beta Blockers
 ☐ ACE Inhibitors and ARBs
 ☐ Calcium Channel Blockers

Safety
 Efficacy

Price
 Tolerability

Simplicity

* fatal or nonfatal stroke

mation
ng Blood Pressure

The remainder of the template details **General Principles and Goals of treatment** in the elderly:

- **General Principles:**
 1. Antihypertensive therapy has shown to reduce morbidity and mortality older patients with elevated systolic and diastolic blood pressures
 2. This benefit appears to persist in patients older than 80 years, but less than one third of older patients have adequate pressure control.
 3. Systolic Blood pressure is the most important predictor of cardiovascular disease.
 4. Blood pressure measurement in older persons should include an evaluation for orthostatic hypotension.
 5. Low-dose thiazide diuretics remain first-line therapy for older patients
 6. Beta blockers, angiotensin-converting enzyme inhibitors, angiotensin-receptor blockers and calcium channel blockers are second-line medications that should be selected based on comorbidities and risk factors.
- **Treatment Goals**

1. The goal blood pressure recommended by JNC7 is:
 - a. Less than 140/90 mmHg
 - b. Less than 110/70 mmHg in patients with diabetes or chronic kidney disease.
2. JNC 7 recommends treating older patients with stage 1 systolic hypertension (SBP between 140 and 150 mmHg) equally aggressively
3. **Active treatment has been shown to reduce**
 - a. Total mortality
 - b. Cardiovascular mortality
 - c. Fatal or nonfatal cardiovascular events
 - d. Fatal or nonfatal stroke.

There is a series of four documents linked to this template; they are:

- The Elderly and Thiazide Diuretics
- The Elderly and Beta Blockers
- The Elderly and Calcium Channel Blockers
- The Elderly and Ace Inhibitors and ARBs

One last information document is launched from a link entitled, "**Morning Blood Pressure.**" This document addresses the following concept "**Early to Rise - Morning Blood Pressure Predicts Stroke.**"

HPT, Insulin Resistance Template

Hypertension Management

[Guidelines](#)

Patient:
 Age: Sex:

Beginning Blood Pressure: / /
 Highest Blood Pressure: / /

Vital Signs

Blood Pressure: / /
 Trial 1: /
 Trial 2: /
 Trial 3: /
 Pulse:
 Height: inches
 Weight: pounds
 BMI:
 Body Fat: %
 Waist: inches
 Hips: inches
 Ratio:

Major Risk Factors

☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors

☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification:
 Recommended Follow-Up:
 Risk Group:
 Treatment Based on Risk Assessment:

Fram.CVD 10-Yr Risk: %
 Fram.Stroke 10-Yr Risk: %
 Global Cardio Risk:
 Metabolic Syndrome: ☐ - ☐ + ☐

Vitals Over Time

Lab Results
 Labs Over Time

Navigation

☒ HPT ☐ General

Home
 Lifestyle Changes
 Dippers and White Coat
 HPT and Diabetes
 HPT and Depression
 HPT and the Elderly
HPT, Insulin Resistance
 Isolated Systolic HPT
 HPT and Kidney Disease
 Evaluation
 Diagnosis and Screening
 Treatment
 HPT Plan
 Physician Role

Patient Information
 Click for Documents

Physician Information
[Classification](#)
[Risk Stratification](#)

In SETMA's **Metabolic Syndrome Suite of Templates**, on the **Insulin Resistance Template**, the following statements are made:

- Insulin resistance contributes to decreased renal function reserve and to the development of hypertension
- Insulin resistance is one of the causes of treatment-resistant essential hypertension

The medical literature is not unanimous in these conclusions at present but the association between insulin resistance and the other markers of the metabolic syndrome - obesity, dyslipidemia, hyperglycemia, renal damage as evidenced by microalbuminuria - all of which are both causes of and results of endothelium dysfunction, is strong. So much so, that in the face of treatment resistant hypertension, it is worthwhile to address the issue of insulin resistance and endothelium dysfunction.

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

Return

[Metabolic Syndrome](#) - ☒ + ☐ [Screening for Insulin Resistance](#)

Fasting Glucose

Fasting Insulin

HOMA-IR

Triglycerides

HDL

Trig/HDL Ratio

Information

[Insulin Resistance Predicts HPT](#)
[Teenage Insulin Resistance and Adult Hypertension](#)
[HPT Family History Predicts Insulin Resistance](#)
[Endothelial Physiology](#)
[Components of Insulin Resistance](#)
[Hypertension, Insulin and IGT](#)
[Hypertension and Lipidic Acid](#)
[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

At the top of HPT, Insulin Resistance template are the following General Concepts:

- One half of patents with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
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[Return](#)

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Fasting Glucose

Fasting Insulin

HOMA-IR

Triglycerides

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Trig/HDL Ratio

Information

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[Endothelial Physiology](#)
[Components of Insulin Resistance](#)
[Hypertension, Insulin and IGT](#)
[Hypertension and Lipoic Acid](#)
[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

Beneath these principles is a link to the **Metabolic Syndrome Assessment Template** which results will populate the check boxes which display whether or not the patient has the metabolic syndrome.

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

[Return](#)

[Metabolic Syndrome](#) - ☒ + ☐ [Screening for Insulin Resistance](#)

Fasting Glucose

Fasting Insulin

HOMA-IR

Triglycerides

HDL

Trig/HDL Ratio

Information

[Insulin Resistance Predicts HPT](#)
[Teenage Insulin Resistance and Adult Hypertension](#)
[HPT Family History Predicts Insulin Resistance](#)
[Endothelial Physiology](#)
[Components of Insulin Resistance](#)
[Hypertension, Insulin and IGT](#)
[Hypertension and Lipoic Acid](#)
[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

Cardiometabolic Risk Syndrome Assessment

Last Updated/Reviewed: 12/02/2009

Triglycerides mg/dL

Central Obesity

Waist inches

Hip inches

Ratio 1.00

BMI mg/m²

Blood Pressure / mmHg

Glucose Abnormalities

Fasting mg/dL

2 Hr GTT mg/dL

Diabetes ☐ + ☐ -

Insulin Resistance ☐ + ☐ -

HDL mg/dL

Microalbuminuria

Alb/Creat mg/g

Spot A/C mg/dL

WHO Diagnostic Criteria

☐ + ☐ -

≥ 150 mg/dL

Ratio

Men > 0.90

Women > 0.85

BMI > 30

$> 140/90$ mmHg

Fasting > 110 mg/dL

2 Hr GTT > 140 mg/dL

Diabetes

Insulin Resistance

Men < 35 mg/dL

Women < 39 mg/dL

> 30 mg/g

> 2.9 mg/dL

ATP III Diagnostic Criteria

☐ + ☐ -

≥ 150 mg/dL

Waist

Men > 40 inches

Women > 35 inches

$> 130/85$ mmHg

Fasting > 110 mg/dL

Men < 40 mg/dL

Women < 50 mg/dL

Return

Minor Features

- ☐ Pro-inflammatory State: Increased CRP
- ☐ Polycystic Ovarian Syndrome
- ☐ Coronary Heart Disease
- ☐ Small, dense LDL particle size
- ☐ Increased Apolipoprotein B
- ☐ Hypercoagulability/Prothrombotic State: Increased fibrinogen and PAI-1
- ☐ Vascular Endothelial Dysfunction: The inside of the artery doesn't work correctly.
- ☐ Microalbuminuria: The kidneys fail and allow protein to go into urine inappropriately.

Next is a link to the **Screening for Insulin Resistance** template which is part of the **Less Initiative**.

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

Return

Metabolic Syndrome - ☐ + ☐ Screening for Insulin Resistance

Diabetes Insulins

Screening for Insulin Resistance

The following are factors which increase the likelihood of insulin resistance...

<input type="radio"/> Yes <input type="radio"/> No	Diagnosis of CVD, hypertension, PCOS, NAFLD, or acanthosis nigricans?
<input type="radio"/> Yes <input type="radio"/> No	Non-Caucasian ethnicity?
<input type="radio"/> Yes <input type="radio"/> No	Family history of diabetes, hypertension, or CVD?
<input type="radio"/> Yes <input type="radio"/> No	Personal history of gestational diabetes or glucose intolerance?
<input type="radio"/> Yes <input type="radio"/> No	Sedentary lifestyle?
<input type="radio"/> Yes <input type="radio"/> No	Elevated BMI?
<input checked="" type="radio"/> Yes <input type="radio"/> No	Elevated waist circumference? (Males>40", Females>35")
<input type="radio"/> Yes <input type="radio"/> No	Patient over 40?

The following are abnormalities of the insulin resistance syndrome...

<input type="radio"/> Yes <input type="radio"/> No	Elevated triglycerides?	<input type="text"/>	//	
<input type="radio"/> Yes <input type="radio"/> No	Low HDL cholesterol?	<input type="text"/>	//	
<input type="radio"/> Yes <input type="radio"/> No	Elevated blood pressure?	<input type="text"/>	/	
<input type="radio"/> Yes <input type="radio"/> No	Elevated glucose levels?	Fasting	<input type="text"/>	//
		2 Hr OGTT	<input type="text"/>	//

Based on the risk factors and abnormalities indicated above...

Conclusion?

OK Cancel

The elements of this template are automatically populated from the EMR data base. When the button entitled Conclusion? is depressed a summary of whether the patient is at risk for insulin resistance, and consequently the potential blood pressure problems associated with it, will appear.

The following laboratory values are then displayed:

- Fasting Glucose
- Fasting Insulin
- **HOMA-IR** - Homeostasis Model Assessment of Insulin Resistance. A value above 2 indicates insulin resistance.
- Triglycerides

- HDL
- **Trig/HDL Ratio** - a value above 2 for this ratio indicates Insulin Resistance.

Hypertension and Insulin Resistance

Return

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

[Metabolic Syndrome](#) - ☒ + ☐ [Screening for Insulin Resistance](#)

Fasting Glucose	<input type="text"/>	<input type="text"/>
Fasting Insulin	<input type="text"/>	<input type="text"/>
HOMA-IR	<input type="text"/>	<input type="text"/>
Triglycerides	<input type="text"/>	<input type="text"/>
HDL	<input type="text"/>	<input type="text"/>
Trig/HDL Ratio	<input type="text"/>	<input type="text"/>

Information

[Insulin Resistance Predicts HPT](#)

[Teenage Insulin Resistance and Adult Hypertension](#)

[HPT Family History Predicts Insulin Resistance](#)

[Endothelial Physiology](#)

[Components of Insulin Resistance](#)

[Hypertension, Insulin and IGT](#)

[Hypertension and Lipoic Acid](#)

[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

Beside the laboratory values are buttons which launch the following documents:

- Insulin Resistance Predicts HPT
- Teenage Insulin Resistance and Adult Hypertension
- HPT Family History Predicts Insulin Resistance
- Endothelial Physiology
- Components of Insulin Resistance
- Hypertension, Insulin and IGT
- Hypertension and Lipoic Acid
- Hypertension and Insulin Resistance

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

[Return](#)

[Metabolic Syndrome](#) - ☒ + ☐ [Screening for Insulin Resistance](#)

Fasting Glucose

Fasting Insulin

HOMA-IR

Triglycerides

HDL

Trig/HDL Ratio

Information

[Insulin Resistance Predicts HPT](#)
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[Hypertension and Lipidic Acid](#)
[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

At the bottom of this template are six buttons which launch **Treatment Recommendations** for the following,(for details on these functions, which are self explanatory. see the tutorial for the **Metabolic Syndrome Treatment Recommendations**.):

- Insulin Sensitivity
- hsCRP
- Homocysteine
- Hypertriglyceridemia
- Impaired Fasting Glucose
- Endothelial Dysfunction

Hypertension and Insulin Resistance

- One half of patients with essential hypertension are insulin resistant and hyperinsulinemic.
- There is evidence that blood pressure is linked to the degree of insulin resistance.
- Exactly how insulin resistance influences blood pressure, however, is controversial.
- Furthermore, a strong relationship between insulin resistance and blood pressure may not occur in many patients, especially black patients.

[Return](#)

[Metabolic Syndrome](#) - ☒ ☐ [Screening for Insulin Resistance](#)

Fasting Glucose	<input type="text"/>	<input type="text"/>
Fasting Insulin	<input type="text"/>	<input type="text"/>
HOMA-IR	<input type="text"/>	<input type="text"/>
Triglycerides	<input type="text"/>	<input type="text"/>
HDL	<input type="text"/>	<input type="text"/>
Trig/HDL Ratio	<input type="text"/>	<input type="text"/>

Information

[Insulin Resistance Predicts HPT](#)
[Teenage Insulin Resistance and Adult Hypertension](#)
[HPT Family History Predicts Insulin Resistance](#)
[Endothelial Physiology](#)
[Components of Insulin Resistance](#)
[Hypertension, Insulin and IGT](#)
[Hypertension and Lipidic Acid](#)
[Hypertension and Insulin Resistance](#)

Treatment

Insulin Sensitivity	Homocysteine	Impaired Fasting Glucose
hsCRP	Hypertriglyceridemia	Endothelial Dysfunction

Isolated Systolic Hypertension Template

Perhaps the most under treated and damaging form of hypertension is Isolated Systolic Hypertension (ISH), particularly in the elderly. The key to ISH treatment is its recognition and diagnosis and the understanding of the increased cardiovascular and cerebrovascular risk associated with it.

Hypertension Management

[Guidelines](#)

Patient

Age **Sex**

Beginning Blood Pressure
 / /

Highest Blood Pressure
 / /

Vital Signs
 Blood Pressure
 Trial 1 /
 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
[Ratio](#)
 Fram CVD 10-Yr Risk %
[Fram. Stroke 10-Yr Risk](#) %
[Global Cardio Risk](#)
 Metabolic Syndrome - ☐ ☐ ☐

Major Risk Factors
☒ Tobacco Use
☐ [Dyslipidemia](#)
☐ [Diabetes Mellitus](#)
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female
Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment

Blood Pressure Classification

Recommended Follow-Up

Risk Group

Treatment Based on Risk Assessment

Lab Results

Labs Over Time

Navigation
☒ HPT ☐ General

Home
 Lifestyle Changes
 Dippers and White Coat
 HPT and Diabetes
 HPT and Depression
 HPT and the Elderly
 HPT... Insulin Resistance

Isolated Systolic HPT

 HPT and Kidney Disease
 Evaluation
 Diagnosis and Screening
 Treatment
 HPT Plan
 Physician Role

Patient Information
 Click for Documents

Physician Information
[Classification](#)
[Risk Stratification](#)

Vitals Over Time

Dm Hpt ISH

Isolated Systolic Hypertension

Definition - Elevated systolic blood pressure (> 140 mm Hg) with normal diastolic blood pressure (< 90 mm Hg).
 Incidence - Hypertension occurs in 50% of those over 60 years of age regardless of race. The majority of these have ISH.
 Prevention - No hypertension in primitive societies whose members maintain lean body mass and are physically active.

<p>Contributing Causes</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increased body fat <input type="checkbox"/> Sedentary lifestyle <input type="checkbox"/> Increased sodium intake <input type="checkbox"/> Loss of elasticity of aorta and peripheral vessels <input type="checkbox"/> Increased cardiac output Compensatory for maintaining oxygen delivery <p>Associated Features</p> <ul style="list-style-type: none"> <input type="checkbox"/> Low plasma volume Consistent with general body water loss <input type="checkbox"/> Renal excretion of salt decreased Making elder more sensitive to salt <p>Risk</p> <ul style="list-style-type: none"> <input type="checkbox"/> Three-fold increase of stroke <input type="checkbox"/> Increased risk of overall mortality <input type="checkbox"/> Increased risk of cardiovascular mortality <input type="checkbox"/> Increased risk of congestive heart failure 	<p>Evaluation</p> <ul style="list-style-type: none"> <input type="checkbox"/> Exclude diabetes, hypokalemia, and renal disease with blood chemistry <input type="checkbox"/> Urinalysis to exclude proteinuria <input type="checkbox"/> EKG to evaluate for MI, arrhythmias, or LVH <input type="checkbox"/> Echocardiogram for LVH, particularly if signs or symptoms of CHF <p>Treatment</p> <p>Lifestyle</p> <ul style="list-style-type: none"> <input type="checkbox"/> Weight Reduction <input type="checkbox"/> Exercise <input type="checkbox"/> Decreased Salt Intake <input type="checkbox"/> Decreased Alcohol Intake <p>Drugs</p> <ul style="list-style-type: none"> <input type="checkbox"/> Low-dose, long-acting diuretic, such as 12.5 mg daily of hydrochlorothiazide <input type="checkbox"/> Low-dose, long-acting, dihydropyridine calcium channel blocker <input type="checkbox"/> If patient also has angina, a beta-blocker is appropriate <input type="checkbox"/> If patient also has renal insufficiency or cardiomyopathy, an ACE is a good choice <input type="checkbox"/> If patient also has benign prostatic hypertrophy, an alpha blocker is a reasonable choice
--	--

This template contains the following material:

- **Definition** - Elevated systolic blood pressure (> 140 mm Hg) with normal diastolic blood pressure (< 90 mm Hg).
- **Incidence** - Hypertension occurs in 50% of those over 60 years of age regardless of race. The majority of these have ISH.
- **Prevention** - No hypertension in primitive societies whose members maintain lean body mass and are physically active.
- **Contributing Causes**
 1. Increased body fat
 2. Sedentary lifestyle
 3. Increased sodium intake
 4. Loss of elasticity of aorta and peripheral vessels compensatory for maintaining oxygen delivery
- **Associated Features**
 1. Low plasma volume consistent with general body water loss
 2. Renal excretion of salt decreased making elder more sensitive to salt
- **Risk**
 1. Three-fold increase of stroke
 2. Increased risk of overall mortality

3. Increased risk of cardiovascular mortality
 4. Increased risk of congestive heart failure
- **Evaluation**
 1. Exclude diabetes, hypokalemia, and renal disease with blood chemistry
 2. Urinalysis to exclude proteinuria
 3. EKG to evaluate for MI, arrhythmias, or LVH
 4. Echocardiogram for LVH, particularly if signs or symptoms of CHF
 - **Treatment**
 1. **Lifestyle**
 1. Weight Reduction
 2. Exercise
 3. Decreased Salt Intake
 4. Decreased Alcohol Intake
 2. **Drugs**
 1. Low-dose, long-acting diuretic, such as 12.5 mg daily of hydrochlorothiazide
 2. Low-dose, long-acting, dihydropyridine calcium channel blocker
 3. If patient also has **angina**, a beta-blocker is appropriate
 4. If patient also has **renal insufficiency** or cardiomyopathy, an ACE is a good choice
 5. If patient also has **benign prostatic hypertrophy**, an alpha blocker is a reasonable choice

Hypertension and Kidney Disease Template

Hypertension Management
Guidelines

Patient RichmondPROI Ztest
Age 35 **Sex** M

Beginning Blood Pressure / / 0 / 0
Highest Blood Pressure / / 0 / 0

Vital Signs
Blood Pressure Trial 1 / / Trial 2 / / Trial 3 / /
Pulse Pressure 0
Pulse /
Height / inches
Weight / pounds
BMI /
Body Fat %
Waist 1234.1 inches
Hips / inches
Ratio .00

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment
Blood Pressure Classification
Recommended Follow-Up
Risk Group
Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General
Home
Lifestyle Changes
Dippers and White Coat
HPT and Diabetes
HPT and Depression
HPT and the Elderly
HPT, Insulin Resistance
Isolated Systolic HPT
HPT and Kidney Disease
Evaluation
Diagnosis and Screening
Treatment
HPT Plan
Physician Role
Patient Information
Click for Documents
Physician Information
Classification
Risk Stratification

Fram CVD 10-Yr Risk %
Fram. Stroke 10-Yr Risk 0 %
Global Cardio Risk .0
Metabolic Syndrome - +
Vitals Over Time

The association between hypertension in both primary and secondary conditions is well defined. The unique aspect of Kidney disease and hypertension is that hypertension can both be a cause of and a result of kidney disease.

This is a duplicate of the **Hypertension template** in the **Renal Disease Suite of Templates**. The template begins with the following concepts:

- High blood pressure can be either a cause or a consequence of chronic kidney disease.
- High blood pressure causes a faster decline in kidney disease and cardiovascular disease.
- Prevalence of high blood pressure is related to the level of GFR.
- Patients with chronic kidney disease have a high prevalence of high blood pressure even when GFR is only mildly reduced.

Mechanism of HBP in Kidney Disease - this launches a document which addresses this issue.

Beneath this link, there are boxes which document:

- **Blood Pressure (this visit)**
- **Blood Pressure History (Hypertension Mgmt)**

1. Beginning Blood Pressure
2. Highest Blood Pressure

GFR and Hypertension

High [blood pressure](#) can be either a cause or a consequence of chronic kidney disease. High blood pressure causes a faster decline in kidney function and cardiovascular disease.

Prevalence of high blood pressure is related to the level of GFR. Patients with chronic kidney disease have a high prevalence of high blood pressure, even when GFR is only mildly reduced.

[Mechanisms of HBP in Kidney Disease](#)

Blood Pressure (This Visit)	Blood Pressure History (Hypertension Mgmt)	
<input type="text"/> / <input type="text"/> mmHg <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/>	Beginning <input type="text"/> / <input type="text"/> / <input type="text"/> Highest <input type="text"/> / <input type="text"/> / <input type="text"/>	Low Sodium Diet Exercise

[Algorithm](#)

BP Goal

Nonpharmacologic Therapy

Pharmacologic Therapy

There is then a button entitled "**Calculate**" when depressed it fills in the following boxes:

- BP Goal
- Nonpharmacologic Therapy
- Pharmacologic Therapy

GFR and Hypertension

High [blood pressure](#) can be either a cause or a consequence of chronic kidney disease. High blood pressure causes a faster decline in kidney function and cardiovascular disease.

Prevalence of high blood pressure is related to the level of GFR. Patients with chronic kidney disease have a high prevalence of high blood pressure, even when GFR is only mildly reduced.

[Mechanisms of HBP in Kidney Disease](#)

Blood Pressure (This Visit)	Blood Pressure History (Hypertension Mgmt)	
<input type="text"/> / <input type="text"/> mmHg <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/>	Beginning <input type="text"/> / <input type="text"/> / <input type="text"/> Highest <input type="text"/> / <input type="text"/> / <input type="text"/>	Low Sodium Diet Exercise

[Algorithm](#)

BP Goal

Nonpharmacologic Therapy

Pharmacologic Therapy

Algorithm - this button launches a pop-up which lists the **National Kidney Foundation Blood Pressure Recommendations** on the basis of which the above boxes are completed automatically.

GFR and Hypertension

High [blood pressure](#) can be either a cause or a consequence of chronic kidney disease. High blood pressure causes a faster decline in kidney function and cardiovascular disease.

Prevalence of high blood pressure is related to the level of GFR. Patients with chronic kidney disease have a high prevalence of high blood pressure, even when GFR is only mildly reduced.

[Mechanisms of HBP in Kidney Disease](#)

Blood Pressure (This Visit)

	/		mmHg
	/		
	/		

Blood Pressure History (Hypertension Mgmt)

Beginning	0	/	0	/	/	/
Highest	0	/	0	/	/	/

BP Goal

< 130/80

Nonpharmacologic Therapy

Reduction in dietary salt, Exercise

Pharmacologic Therapy

Beta-Blockers, Diuretics

Calculate

Algorithm

Dm Crf Hptalgo

X

Blood Pressure Recommendations from the NKF

Population	BP Goal (mmHg)	Nonpharmacologic Therapy	Pharmacologic Therapy
General Population	< 130/80	Reduction in dietary salt, Exercise	Beta-blockers, diuretics
CKD Stages 1-4 w/ proteinuria (>1 g/d)	< 125/75	Reduction in dietary salt	ACE-inhibitors or angiotensin 2 receptor blockers (diuretics), or CCBs in kidney transplant patients
CKD Stages 1-4 (w/o proteinuria)	< 135/85	Reduction in dietary salt	ACE-inhibitors or angiotensin 2 receptor blockers (diuretics), or CCBs in kidney transplant patients
Stage 5	< 140/90	Reduction in dietary salt. Reduction in fluid intake and ultrafiltration in dialysis patients.	Any, except diuretics in dialysis patients

There are two links related to lifestyle changes which improve hypertension particularly in relationship to kidney disease; they are:

- Low Sodium Diet
- Exercise

Evaluation Template

The screenshot shows a web-based interface for "Hypertension Management". At the top left is the title "Hypertension Management" with a "Guidelines" link. To the right, patient information is entered: "Patient" (RichmondPROf), "Ztest", "Age" (35), and "Sex" (M). Below this are input fields for "Beginning Blood Pressure" and "Highest Blood Pressure", each with a format of " / / " followed by "0" and "0".

The main content area is divided into several sections:

- Vital Signs:** Includes fields for "Blood Pressure" (Trial 1, 2, 3), "Pulse Pressure" (0), "Pulse", "Height" (inches), "Weight" (pounds), "BMI", "Body Fat" (%), "Waist" (1234.1 inches), "Hips" (inches), and "Ratio" (.00). There are also links for "Fram CVD 10-Yr Risk", "Fram Stroke 10-Yr Risk", "Global Cardio Risk", and "Metabolic Syndrome" with a toggle switch.
- Major Risk Factors:** Includes checkboxes for "Tobacco Use", "Dyslipidemia", "Diabetes Mellitus", "Family Hx of CV Disease", "Male < 55", "Female < 65", "Sex" (Male, Postmenopausal Female), and "Additional Risk Factors" (CHF, CAD, TIA, Stroke, Peripheral Vascular Disease, Renal Insufficiency, Retinopathy).
- Calculation and Results:** A "Calculate Assessment" button is present. Below it are input fields for "Blood Pressure Classification", "Recommended Follow-Up", "Risk Group", and "Treatment Based on Risk Assessment".
- Buttons:** "Vitals Over Time", "Lab Results", and "Labs Over Time" are located at the bottom.

On the right side, there is a "Navigation" panel with a radio button for "HPT" (selected) and "General". Below this is a list of menu items: "Home", "Lifestyle Changes", "Dippers and White Coat", "HPT and Diabetes", "HPT and Depression", "HPT and the Elderly", "HPT, Insulin Resistance", "Isolated Systolic HPT", "HPT and Kidney Disease", "Evaluation" (highlighted with a red box), "Diagnosis and Screening", "Treatment", "HPT Plan", and "Physician Role". At the bottom of the navigation panel are sections for "Patient Information" (Click for Documents) and "Physician Information" (Classification, Risk Stratification).

The Evaluation Template has the following content:

Displays the two major types of hypertension:

- **Primary Hypertension** - has no clearly defined etiology
- **Secondary Hypertension** - often has no symptoms

Just below this information is a button entitled "**Primary Pulmonary Hypertension**".

Primary Pulmonary Hypertension is not a part of systemic hypertension but is presented here because of the close association of the name.

Hypertension Evaluation

Primary Hypertension

Primary hypertension has no clearly defined etiology.

[Return](#)

Secondary Hypertension

Most commonly hypertension has no symptoms!!!

Primary Pulmonary Hypertension

Information

[Arterial Hypertension](#)

[Renovascular Hypertension](#)

Signs & Symptoms

- ☐ Headache
- ☐ Dizziness
- ☐ Fatigue
- ☐ Palpitations
- ☐ Malaise
- ☐ Nosebleeds
- ☐ Weight Loss
- ☐ Swelling in the Legs
- ☐ Weakness
- ☐ Frequent Urination
- ☐ Increased Thirst
- ☐ Enlarged, Round, or "Moon" Face
- ☐ Excess Body and Facial Hair

Causes

Adrenal

- ☐ [Primary Aldosteronism](#)
- ☐ Cushing's Syndrome
- ☐ [Pheochromocytoma](#)
- ☐ Congenital Adrenal Hyperplasia

Endocrine

- ☐ Acromegaly
- ☐ Hypercalcemia
- ☐ Hyperparathyroidism
- ☐ Hyperthyroidism
- ☐ Hypothyroidism
- ☐ [Oral Contraceptives](#)
- ☐ Pregnancy-induced Hypertension

Neurologic

- ☐ Brain Tumor
- ☐ Bulbar Poliomyelitis
- ☐ Intracranial Hypertension

Drugs & Toxins

- ☐ Alcohol
- ☐ Cocaine
- ☐ Cyclosporin
- ☐ [Erythropoietin](#)
- ☐ Adrenergic Medications

Renal

- ☐ Renal Parenchymal Disease
- ☐ Polycystic Kidney Disease
- ☐ Urinary Tract Obstruction
- ☐ Renin-producing Tumor
- ☐ [Liddle Syndrome](#)
- ☐ [Renovascular Hypertension](#)

Vascular

- ☐ Coarctation of Aorta
- ☐ Vasculitis
- ☐ Collagen Vascular Disease

- **Definition** -- Pulmonary hypertension is when the blood pressure in the arteries of the lungs is abnormally high. "Primary" means that there are no other diseases of the heart or lungs causing the high blood pressure.
- **Alternative Names** -- Pulmonary arterial hypertension; Sporadic primary pulmonary hypertension; Familial primary pulmonary hypertension
- **Causes And Risk** -- The cause of primary pulmonary hypertension is unknown. Some cases are caused by a genetic defect.
 1. The small arteries of the lung narrow throughout the lungs. Pulmonary hypertension is the result of greater resistance to blood flow. As a result of the increased workload caused by this resistance, the right side of the heart becomes enlarged.
 2. This disease is rare. It affects more women than men.
 3. Pulmonary hypertension is the narrowing of the pulmonary arterioles within the lung. The narrowing of the arteries creates resistance and an increased work load for the heart. The heart becomes enlarged from pumping blood against the resistance.
 4. The goal of treatment is control of the symptoms, although the disease usually develops into congestive heart failure.
- **Symptoms**
 1. Shortness of breath during activity
 2. Chest pain

3. Weakness
 4. Fatigue
 5. Fainting
 6. Lightheadedness during exercise
 7. Dizziness
 8. Leg Swelling
- **Signs and Tests**
 1. A physical examination shows enlargement of the veins in the neck, normal lungs, a heart murmur, enlargement of the liver, and swelling due to fluid retention in the tissues.
 2. Tests
 - a. ECG
 - b. Chest X-Ray
 - c. Echocardiogram
 - d. Pulmonary Function Tests
 - e. Nuclear Lung Scan
 - f. CT Scan of the Chest
 - g. Cardiac Catheterization
 - h. Pulmonary Arteriogram
 - **Call Your Doctor If...**
 1. Chest pain develops
 2. You develop shortness of breath when active
 3. Shortness of breath worsens
 4. You experience other symptoms
 - **Treatment**
 1. There is no known cure. The goal of treatment is to control symptoms. Some people respond to treatment with oral medications, such as calcium channel blockers and diuretics. Others may need drugs like intravenous epoprostenol.
 2. Recently, a new oral drug that blocks abnormal constriction of blood vessels has become available and shows promise in treating pulmonary hypertension.
 3. As the disease progresses, oxygen may be necessary. If all else fails, suitable candidates may be helped by lung or heart-lung transplantation.
 4. Most patients with primary pulmonary hypertension are treated at centers which specialize in the care of these patients.

Dm Hpt Pph

Primary Pulmonary Hypertension

Definition

Pulmonary hypertension is when the blood pressure in the arteries of the lungs is abnormally high. "Primary" means that there are no other diseases of the heart or lungs causing the high blood pressure.

Alternative Names

Pulmonary arterial hypertension; Sporadic primary pulmonary hypertension; Familial primary pulmonary hypertension

Causes And Risk

The cause of primary pulmonary hypertension is unknown. Some cases are caused by a genetic defect.

The small arteries of the lung narrow throughout the lungs. Pulmonary hypertension is the result of greater resistance to blood flow. As a result of the increased workload caused by this resistance, the right side of the heart becomes enlarged. Eventually, progressive heart failure may develop.

This disease is rare. It affects more women than men.

Pulmonary hypertension is the narrowing of the pulmonary arterioles within the lung. The narrowing of the arteries creates resistance and an increased work load for the heart. The heart becomes enlarged from pumping blood against the resistance.

The goal of treatment is control of the symptoms, although the disease usually develops into congestive heart failure.

Symptoms

☐ Shortness of breath during activity

☐ Chest pain

☐ Weakness

☐ Fatigue

☐ Fainting

☐ Lightheadedness during exercise

☐ Dizziness

☐ Leg Swelling

Signs and Tests

A physical examination shows enlargement of the veins in the neck, normal lungs, a heart murmur, enlargement of the liver, and swelling due to fluid retention in the tissues.

☐ ECG
☐ Nuclear Lung Scan

☐ Chest X-Ray
☐ CT Scan of the Chest

☐ Echocardiogram
☐ Cardiac Catheterization

☐ Pulmonary Function Tests
☐ Pulmonary Arteriogram

Call Your Doctor If...

☐ Chest pain develops
☐ You develop shortness of breath when active

☐ You experience other symptoms
☐ Shortness of breath worsens

Treatment

There is no known cure. The goal of treatment is to control symptoms. Some people respond to treatment with oral medications, such as calcium channel blockers and diuretics. Others may need drugs like intravenous epoprostenol.

Recently, a new oral drug that blocks abnormal constriction of blood vessels has become available and shows promise in treating pulmonary hypertension.

As the disease progresses, oxygen may be necessary. If all else fails, suitable candidates may be helped by lung or heart-lung transplantation.

Most patients with primary pulmonary hypertension are treated at centers which specialize in the care of these patients.

OK

Cancel

There are two series of checkboxes in the last section on the "**Hypertension Evaluation**" screen entitled "**Signs & Symptoms**" and "**Causes**". While most patients with hypertension have no signs or symptoms, these are sometimes associated with secondary hypertension:

Signs & Symptoms

- Headache
- Dizziness
- Fatigue
- Palpitations
- Malaise
- Nosebleeds
- Weight Loss
- Swelling in the legs
- Weakness
- Frequent Urination
- Increased Thirst
- Enlarged, Round, or "Moon" Face
- Excess Body and Facial Hair

Hypertension Evaluation

Primary Hypertension

Primary hypertension has no clearly defined etiology.

Secondary Hypertension

Most commonly hypertension has no symptoms!!!

Primary Pulmonary Hypertension

[Return](#)

Information

[Arterial Hypertension](#)
[Renovascular Hypertension](#)

Signs & Symptoms

- ☐ Headache
- ☐ Dizziness
- ☐ Fatigue
- ☐ Palpitations
- ☐ Malaise
- ☐ Nosebleeds
- ☐ Weight Loss
- ☐ Swelling in the Legs
- ☐ Weakness
- ☐ Frequent Urination
- ☐ Increased Thirst
- ☐ Enlarged, Round, or "Moon" Face
- ☐ Excess Body and Facial Hair

Causes

Adrenal

- ☐ [Primary Aldosteronism](#)
- ☐ Cushing's Syndrome
- ☐ [Pheochromocytoma](#)
- ☐ Congenital Adrenal Hyperplasia

Endocrine

- ☐ Acromegaly
- ☐ Hypercalcemia
- ☐ Hyperparathyroidism
- ☐ Hyperthyroidism
- ☐ Hypothyroidism
- ☐ [Oral Contraceptives](#)
- ☐ Pregnancy-induced Hypertension

Neurologic

- ☐ Brain Tumor
- ☐ Bulbar Poliomyelitis
- ☐ Intracranial Hypertension

Drugs & Toxins

- ☐ Alcohol
- ☐ Cocaine
- ☐ Cyclosporin
- ☐ [Erythropoietin](#)
- ☐ Adrenergic Medications

Renal

- ☐ Renal Parenchymal Disease
- ☐ Polycystic Kidney Disease
- ☐ Urinary Tract Obstruction
- ☐ Renin-producing Tumor
- ☐ [Liddle Syndrome](#)
- ☐ [Renovascular Hypertension](#)

Vascular

- ☐ Coarctation of Aorta
- ☐ Vasculitis
- ☐ Collagen Vascular Disease

Causes

1. Adrenal

- a. Primary Aldosteronism
- b. Cushing's Syndrome
- c. Pheochromocytoma
- d. Congenital Adrenal Hyperplasia

2. Endocrine

- a. Acromegaly
- b. Hypercalcemia
- c. Hyperparathyroidism
- d. Hypothyroidism
- e. Oral Contraceptives
- f. Pregnancy-induced hypertension

3. Neurological

- a. Brain Tumor
- b. Bulbar Poliomyelitis
- c. Intracranial Hypertension

4. Drugs and Toxins

- a. Alcohol
- b. Cocaine

- c. Cyclosporin
- d. Erythropoietin
- e. Adrenergic Medications

5. Renal

- a. Renal Parenchymal Disease
- b. Polycystic Kidney Disease
- c. Urinary Tract Obstruction
- d. Renin-producing Tumor
- e. Liddle Syndrome
- f. Renovascular Hypertension

6. Vascular

- a. Coarctation of Aorta
- b. Vasculitis
- c. Collagen Vascular Disease

Hypertension Evaluation

Primary Hypertension

Primary hypertension has no clearly defined etiology.

Secondary Hypertension

Most commonly hypertension has no symptoms!!!

Primary Pulmonary Hypertension

Return

Information

[Arterial Hypertension](#)

[Renovascular Hypertension](#)

Signs & Symptoms

- ☐ Headache
- ☐ Dizziness
- ☐ Fatigue
- ☐ Palpitations
- ☐ Malaise
- ☐ Nosebleeds
- ☐ Weight Loss
- ☐ Swelling in the Legs
- ☐ Weakness
- ☐ Frequent Urination
- ☐ Increased Thirst
- ☐ Enlarged, Round, or "Moon" Face
- ☐ Excess Body and Facial Hair

Causes

<p>Adrenal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Primary Aldosteronism <input type="checkbox"/> Cushing's Syndrome <input type="checkbox"/> Pheochromocytoma <input type="checkbox"/> Congenital Adrenal Hyperplasia <p>Endocrine</p> <ul style="list-style-type: none"> <input type="checkbox"/> Acromegaly <input type="checkbox"/> Hypercalcemia <input type="checkbox"/> Hyperparathyroidism <input type="checkbox"/> Hyperthyroidism <input type="checkbox"/> Hypothyroidism <input type="checkbox"/> Oral Contraceptives <input type="checkbox"/> Pregnancy-induced Hypertension <p>Neurologic</p> <ul style="list-style-type: none"> <input type="checkbox"/> Brain Tumor <input type="checkbox"/> Bulbar Poliomyelitis <input type="checkbox"/> Intracranial Hypertension 	<p>Drugs & Toxins</p> <ul style="list-style-type: none"> <input type="checkbox"/> Alcohol <input type="checkbox"/> Cocaine <input type="checkbox"/> Cyclosporin <input type="checkbox"/> Erythropoietin <input type="checkbox"/> Adrenergic Medications <p>Renal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Renal Parenchymal Disease <input type="checkbox"/> Polycystic Kidney Disease <input type="checkbox"/> Urinary Tract Obstruction <input type="checkbox"/> Renin-producing Tumor <input type="checkbox"/> Liddle Syndrome <input type="checkbox"/> Renovascular Hypertension <p>Vascular</p> <ul style="list-style-type: none"> <input type="checkbox"/> Coarctation of Aorta <input type="checkbox"/> Vasculitis <input type="checkbox"/> Collagen Vascular Disease
--	--

NOTE: All Causes listed in blue are linked to a detailed document describing that cause
 At the right hand side of the **Evaluation** template is a **Return** button that takes you back to the Master Hypertension template and

Beneath the **Return** button are two Provider education documents

- **Arterial Hypertension** - this button launches a document entitled "Arterial Hypertension: Etiology and Pathogenesis."
- **Renovascular Hypertension** - this button launches a document entitled the same as the button.

Diagnosis and Screening Template

This template provides the ability for the provider to establish a plan for evaluating secondary forms of hypertension. In addition to identifying the most common causes of secondary hypertension, this template provides a tool to suggest the proper evaluation for patients with a suspected secondary cause of hypertension.

Hypertension Management
[Guidelines](#)

Patient: RichmondPROL Ztest
 Age: 35 Sex: M

Beginning Blood Pressure: / / 0 / 0
 Highest Blood Pressure: / / 0 / 0

Vital Signs
 Blood Pressure: Trial 1 / / Trial 2 / / Trial 3 / /
 Pulse: /
 Height: / inches
 Weight: / pounds
 BMI: /
 Body Fat: / %
 Waist: 1234.1 inches
 Hips: / inches
 Ratio: .00
[Fram CVD 10-Yr Risk](#) %
[Fram Stroke 10-Yr Risk](#) 0 %
[Global Cardio Risk](#) .0
[Metabolic Syndrome](#) - +
 Vitals Over Time

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment
 Blood Pressure Classification
 Recommended Follow-Up
 Risk Group
 Treatment Based on Risk Assessment
 Lab Results
 Labs Over Time

Navigation
☒ HPT ☐ General
 Home
 Lifestyle Changes
 Dippers and White Coat
 HPT and Diabetes
 HPT and Depression
 HPT and the Elderly
 HPT, Insulin Resistance
 Isolated Systolic HPT
 HPT and Kidney Disease
 Evaluation
Diagnosis and Screening
 Treatment
 HPT Plan
 Physician Role
Patient Information
 Click for Documents
Physician Information
[Classification](#)
[Risk Stratification](#)

When the "Diagnosis and Screening" button is clicked, it will display an interactive function entitled "**Screening and Diagnostic Studies for Secondary Hypertension.**" There are two sections on this part of the template, the first is "Suspicions" and the second is "Actions."

Suspicions

- Coarctation of the Aorta
- Cushing's Syndrome
- Pheochromocytoma
- Renovascular Disease

- Thyroid Disease
- Hyperparathyroidism
- Renal Parenchymal Disease

There are check boxes in front of each of these causes of secondary hypertension. If you suspicion one of these conditions to be present, check the box in front of the condition and a list of actions recommended for the evaluation of that condition will be automatically selected.

Screening and Diagnostic Studies for Secondary Hypertension

Return

Suspicion <input type="checkbox"/> Coarctation of Aorta <input type="checkbox"/> Cushing's Syndrome <input type="checkbox"/> Primary Aldosteronism <input type="checkbox"/> Pheochromocytoma <input type="checkbox"/> Renovascular Disease <input type="checkbox"/> Thyroid Disease <input type="checkbox"/> Hyperparathyroidism <input type="checkbox"/> Renal Parenchymal Disease	Actions <div style="display: flex; justify-content: space-between;"> <div style="width: 65%;"> <input type="checkbox"/> 24-hour Urinary Free Cortisol <input type="checkbox"/> 24-hour Urine Protein and Creatinine Levels <input type="checkbox"/> 2D Echo, Aorta <input type="checkbox"/> Abdominal CT <input type="checkbox"/> Aldosterone Excretion Rate During Salt Loading <input type="checkbox"/> Adrenal CT <input type="checkbox"/> Angiography <input type="checkbox"/> Aortogram <input type="checkbox"/> Calcium and Phosphorus Levels <input type="checkbox"/> Captopril Renography <input type="checkbox"/> Chest Film <input type="checkbox"/> Clonidine Suppression Test <input type="checkbox"/> Computed Tomography <input type="checkbox"/> Dexamethasone Suppression Test <input type="checkbox"/> Iodine 131 Metaiodobenzylguanidine Scan </div> <div style="width: 30%;"> <input type="checkbox"/> Iothalamate Glomerular Filtration Rate <input type="checkbox"/> MRI, Aorta <input type="checkbox"/> MRI, Renal Artery <input type="checkbox"/> Plasma Aldosterone:Renin Ratio <input type="checkbox"/> Plasma Catecholamines <input type="checkbox"/> Renal Biopsy <input type="checkbox"/> Renal Duplex Sonography <input type="checkbox"/> Renal Ultrasound <input type="checkbox"/> Renal Vein Renin Ratio <input type="checkbox"/> Serum Calcitonin Level <input type="checkbox"/> Serum Parathyroid Hormone Level <input type="checkbox"/> Serum Thyroid Hormone Level <input type="checkbox"/> Thyrotropin <input type="checkbox"/> Urine Catecholamines </div> </div> <hr style="border: 0; border-top: 1px solid #ccc; margin: 10px 0;"/> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> Primary Pulmonary Hypertension </div> <div style="width: 65%;"> <input type="checkbox"/> Cardiac Catheterization <input type="checkbox"/> Chest CT <input type="checkbox"/> ECG <input type="checkbox"/> Echocardiogram </div> <div style="width: 30%;"> <input type="checkbox"/> Nuclear Lung Scan <input type="checkbox"/> Pulmonary Arteriogram <input type="checkbox"/> Pulmonary Function Testing </div> </div>
--	--

- **Primary Pulmonary Hypertension** - this is not pathophysiologically a part of hypertension but it is included here because it does result in hypertension in the pulmonary vasculature and it is an increasingly diagnosed condition.

Screening and Diagnostic Studies for Secondary Hypertension

Suspicions

- ☐ Coarctation of Aorta
- ☐ Cushing's Syndrome
- ☐ Primary Aldosteronism
- ☐ Pheochromocytoma
- ☐ Renovascular Disease
- ☐ Thyroid Disease
- ☐ Hyperparathyroidism
- ☐ Renal Parenchymal Disease

Actions

- ☐ 24-hour Urinary Free Cortisol
- ☐ 24-hour Urine Protein and Creatinine Levels
- ☐ 2D Echo, Aorta
- ☐ Abdominal CT
- ☐ Aldosterone Excretion Rate During Salt Loading
- ☐ Adrenal CT
- ☐ Angiography
- ☐ Aortogram
- ☐ Calcium and Phosphorus Levels
- ☐ Captopril Renography
- ☒ Chest Film
- ☐ Clonidine Suppression Test
- ☐ Computed Tomography
- ☐ Dexamethasone Suppression Test
- ☐ Iodine 131 Metaiodobenzylguanidine Scan

- ☐ Iothalamate Glomerular Filtration Rate
- ☐ MRI, Aorta
- ☐ MRI, Renal Artery
- ☐ Plasma Aldosterone:Renin Ratio
- ☐ Plasma Catecholamines
- ☐ Renal Biopsy
- ☐ Renal Duplex Sonography
- ☐ Renal Ultrasound
- ☐ Renal Vein Renin Ratio
- ☐ Serum Calcitonin Level
- ☐ Serum Parathyroid Hormone Level
- ☐ Serum Thyroid Hormone Level
- ☐ Thyrotropin
- ☐ Urine Catecholamines

[Return](#)

☒ **Primary Pulmonary Hypertension**

- ☒ Cardiac Catheterization
- ☒ Chest CT
- ☒ ECG
- ☒ Echocardiogram

- ☒ Nuclear Lung Scan
- ☒ Pulmonary Arteriogram
- ☒ Pulmonary Function Testing

Actions

- 24-hour urinary Free Cortisol
- 24-hour Urine Protein and Creatinine Levels
- 2D Echo, Aorta
- Abdominal CT
- Aldosterone Excretion Rate during Salt loading
- Adrenal CT
- Angiography
- Aortogram
- Calcium and Phosphorous Levels
- Captopril Renography
- Chest Film
- Clonidine Suppression Test
- Computed Tomography
- Dexamethasone Suppression Test
- Iodine 131 Metaiodobenzylguanidine Scan
- Iothalamate Glomerular Filtration Rate
- MRI, Aorta
- MRI, Renal Artery
- Plasma Catecholamines
- Renal Biopsy
- Renal Duplex Sonography
- Renal Ultrasound
- Renal Vein Renin Ratio

- Serum Calcitonin Level
- Serum Parathyroid Hormone Level
- Thyroidropin
- Urine Catecholamines
- Cardiac Cauterization
- Chest CT
- ECG
- Echocardiogram
- Nuclear Lung Scan
- Pulmonary Arteriogram
- Pulmonary Function Testing

Screening and Diagnostic Studies for Secondary Hypertension

Suspicions	Actions	
<input type="checkbox"/> Coarctation of Aorta	<input type="checkbox"/> 24-hour Urinary Free Cortisol	<input type="checkbox"/> Iothalamate Glomerular Filtration Rate
<input type="checkbox"/> Cushing's Syndrome	<input type="checkbox"/> 24-hour Urine Protein and Creatinine Levels	<input type="checkbox"/> MRI, Aorta
<input type="checkbox"/> Primary Aldosteronism	<input type="checkbox"/> 2D Echo, Aorta	<input type="checkbox"/> MRI, Renal Artery
<input type="checkbox"/> Pheochromocytoma	<input type="checkbox"/> Abdominal CT	<input type="checkbox"/> Plasma Aldosterone:Renin Ratio
<input type="checkbox"/> Renovascular Disease	<input type="checkbox"/> Aldosterone Excretion Rate During Salt Loading	<input type="checkbox"/> Plasma Catecholamines
<input type="checkbox"/> Thyroid Disease	<input type="checkbox"/> Adrenal CT	<input type="checkbox"/> Renal Biopsy
<input type="checkbox"/> Hyperparathyroidism	<input type="checkbox"/> Angiography	<input type="checkbox"/> Renal Duplex Sonography
<input type="checkbox"/> Renal Parenchymal Disease	<input type="checkbox"/> Aortogram	<input type="checkbox"/> Renal Ultrasound
	<input type="checkbox"/> Calcium and Phosphorus Levels	<input type="checkbox"/> Renal Vein Renin Ratio
	<input type="checkbox"/> Captopril Renography	<input type="checkbox"/> Serum Calcitonin Level
	<input type="checkbox"/> Chest Film	<input type="checkbox"/> Serum Parathyroid Hormone Level
	<input type="checkbox"/> Clonidine Suppression Test	<input type="checkbox"/> Serum Thyroid Hormone Level
	<input type="checkbox"/> Computed Tomography	<input type="checkbox"/> Thyrotropin
	<input type="checkbox"/> Dexamethasone Suppression Test	<input type="checkbox"/> Urine Catecholamines
	<input type="checkbox"/> Iodine 131 Metaiodobenzylguanidine Scan	
<input type="checkbox"/> Primary Pulmonary Hypertension	<input type="checkbox"/> Cardiac Catheterization	<input type="checkbox"/> Nuclear Lung Scan
	<input type="checkbox"/> Chest CT	<input type="checkbox"/> Pulmonary Arteriogram
	<input type="checkbox"/> ECG	<input type="checkbox"/> Pulmonary Function Testing
	<input type="checkbox"/> Echocardiogram	

[Return](#)

For instance, if you suspect a **Pheochromocytoma**, check the box beside that name and the following will automatically have the boxes beside them checked

- Abdominal CT
- Clonidine Suppression Test
- Iodine 131 Metaiodobenzylguanidine Scan
- Plasma Catecholamines
- Urine Catecholamines

Screening and Diagnostic Studies for Secondary Hypertension

[Return](#)

Suspicions

- ☐ Coarctation of Aorta
- ☐ Cushing's Syndrome
- ☐ Primary Aldosteronism
- ☐ Pheochromocytoma
- ☐ Renovascular Disease
- ☐ Thyroid Disease
- ☐ Hyperparathyroidism
- ☐ Renal Parenchymal Disease

Actions

- | | |
|---|---|
| <input type="checkbox"/> 24-hour Urinary Free Cortisol | <input type="checkbox"/> Iothalamate Glomerular Filtration Rate |
| <input type="checkbox"/> 24-hour Urine Protein and Creatinine Levels | <input type="checkbox"/> MRI, Aorta |
| <input type="checkbox"/> 2D Echo, Aorta | <input type="checkbox"/> MRI, Renal Artery |
| <input type="checkbox"/> Abdominal CT | <input type="checkbox"/> Plasma Aldosterone:Renin Ratio |
| <input type="checkbox"/> Aldosterone Excretion Rate During Salt Loading | <input type="checkbox"/> Plasma Catecholamines |
| <input type="checkbox"/> Adrenal CT | <input type="checkbox"/> Renal Biopsy |
| <input type="checkbox"/> Angiography | <input type="checkbox"/> Renal Duplex Sonography |
| <input type="checkbox"/> Aortogram | <input type="checkbox"/> Renal Ultrasound |
| <input type="checkbox"/> Calcium and Phosphorus Levels | <input type="checkbox"/> Renal Vein Renin Ratio |
| <input type="checkbox"/> Captopril Renography | <input type="checkbox"/> Serum Calcitonin Level |
| <input checked="" type="checkbox"/> Chest Film | <input type="checkbox"/> Serum Parathyroid Hormone Level |
| <input type="checkbox"/> Clonidine Suppression Test | <input type="checkbox"/> Serum Thyroid Hormone Level |
| <input type="checkbox"/> Computed Tomography | <input type="checkbox"/> Thyrotropin |
| <input type="checkbox"/> Dexamethasone Supression Test | <input type="checkbox"/> Urine Catecholamines |
| <input type="checkbox"/> Iodine 131 Metaiodobenzylguanidine Scan | |
| <input checked="" type="checkbox"/> Primary Pulmonary Hypertension | <input checked="" type="checkbox"/> Cardiac Catheterization |
| | <input checked="" type="checkbox"/> Chest CT |
| | <input checked="" type="checkbox"/> ECG |
| | <input checked="" type="checkbox"/> Echocardiogram |
| | <input checked="" type="checkbox"/> Nuclear Lung Scan |
| | <input checked="" type="checkbox"/> Pulmonary Arteriogram |
| | <input checked="" type="checkbox"/> Pulmonary Function Testing |

If you think the patient has **Primary Pulmonary Hypertension**, check the box beside that name and the following will automatically have the boxes beside them checked:

- Chest Film
- Chest CT
- ECG
- Echocardiogram
- Nuclear Lung Scan
- Pulmonary Arteriogram
- Pulmonary Function Testing

Screening and Diagnostic Studies for Secondary Hypertension

Suspicions	Actions	
<input type="checkbox"/> Coarctation of Aorta	<input type="checkbox"/> 24-hour Urinary Free Cortisol	<input type="checkbox"/> Iothalamate Glomerular Filtration Rate
<input type="checkbox"/> Cushing's Syndrome	<input type="checkbox"/> 24-hour Urine Protein and Creatinine Levels	<input type="checkbox"/> MRI, Aorta
<input type="checkbox"/> Primary Aldosteronism	<input type="checkbox"/> 2D Echo, Aorta	<input type="checkbox"/> MRI, Renal Artery
<input checked="" type="checkbox"/> Pheochromocytoma	<input checked="" type="checkbox"/> Abdominal CT	<input type="checkbox"/> Plasma Aldosterone:Renin Ratio
<input type="checkbox"/> Renovascular Disease	<input type="checkbox"/> Aldosterone Excretion Rate During Salt Loading	<input checked="" type="checkbox"/> Plasma Catecholamines
<input type="checkbox"/> Thyroid Disease	<input type="checkbox"/> Adrenal CT	<input type="checkbox"/> Renal Biopsy
<input type="checkbox"/> Hyperparathyroidism	<input type="checkbox"/> Angiography	<input type="checkbox"/> Renal Duplex Sonography
<input type="checkbox"/> Renal Parenchymal Disease	<input type="checkbox"/> Aortogram	<input type="checkbox"/> Renal Ultrasound
	<input type="checkbox"/> Calcium and Phosphorus Levels	<input type="checkbox"/> Renal Vein Renin Ratio
	<input type="checkbox"/> Captopril Renography	<input type="checkbox"/> Serum Calcitonin Level
	<input type="checkbox"/> Chest Film	<input type="checkbox"/> Serum Parathyroid Hormone Level
	<input checked="" type="checkbox"/> Clonidine Suppression Test	<input type="checkbox"/> Serum Thyroid Hormone Level
	<input type="checkbox"/> Computed Tomography	<input type="checkbox"/> Thyrotropin
	<input type="checkbox"/> Dexamethasone Suppression Test	<input checked="" type="checkbox"/> Urine Catecholamines
	<input checked="" type="checkbox"/> Iodine 131 Metaiodobenzylguanidine Scan	
<input type="checkbox"/> Primary Pulmonary Hypertension	<input type="checkbox"/> Cardiac Catheterization	<input type="checkbox"/> Nuclear Lung Scan
	<input type="checkbox"/> Chest CT	<input type="checkbox"/> Pulmonary Arteriogram
	<input type="checkbox"/> ECG	<input type="checkbox"/> Pulmonary Function Testing
	<input type="checkbox"/> Echocardiogram	

Treatment Template

Screening and Diagnostic Studies for Secondary Hypertension

Suspicions	Actions	
<input type="checkbox"/> Coarctation of Aorta	<input type="checkbox"/> 24-hour Urinary Free Cortisol	<input type="checkbox"/> Iothalamate Glomerular Filtration Rate
<input type="checkbox"/> Cushing's Syndrome	<input type="checkbox"/> 24-hour Urine Protein and Creatinine Levels	<input type="checkbox"/> MRI, Aorta
<input type="checkbox"/> Primary Aldosteronism	<input type="checkbox"/> 2D Echo, Aorta	<input type="checkbox"/> MRI, Renal Artery
<input checked="" type="checkbox"/> Pheochromocytoma	<input checked="" type="checkbox"/> Abdominal CT	<input type="checkbox"/> Plasma Aldosterone:Renin Ratio
<input type="checkbox"/> Renovascular Disease	<input type="checkbox"/> Aldosterone Excretion Rate During Salt Loading	<input checked="" type="checkbox"/> Plasma Catecholamines
<input type="checkbox"/> Thyroid Disease	<input type="checkbox"/> Adrenal CT	<input type="checkbox"/> Renal Biopsy
<input type="checkbox"/> Hyperparathyroidism	<input type="checkbox"/> Angiography	<input type="checkbox"/> Renal Duplex Sonography
<input type="checkbox"/> Renal Parenchymal Disease	<input type="checkbox"/> Aortogram	<input type="checkbox"/> Renal Ultrasound
	<input type="checkbox"/> Calcium and Phosphorus Levels	<input type="checkbox"/> Renal Vein Renin Ratio
	<input type="checkbox"/> Captopril Renography	<input type="checkbox"/> Serum Calcitonin Level
	<input checked="" type="checkbox"/> Chest Film	<input type="checkbox"/> Serum Parathyroid Hormone Level
	<input checked="" type="checkbox"/> Clonidine Suppression Test	<input type="checkbox"/> Serum Thyroid Hormone Level
	<input type="checkbox"/> Computed Tomography	<input type="checkbox"/> Thyrotropin
	<input type="checkbox"/> Dexamethasone Suppression Test	<input checked="" type="checkbox"/> Urine Catecholamines
	<input checked="" type="checkbox"/> Iodine 131 Metaiodobenzylguanidine Scan	
<input checked="" type="checkbox"/> Primary Pulmonary Hypertension	<input checked="" type="checkbox"/> Cardiac Catheterization	<input checked="" type="checkbox"/> Nuclear Lung Scan
	<input checked="" type="checkbox"/> Chest CT	<input checked="" type="checkbox"/> Pulmonary Arteriogram
	<input checked="" type="checkbox"/> ECG	<input checked="" type="checkbox"/> Pulmonary Function Testing
	<input checked="" type="checkbox"/> Echocardiogram	

This template pulls together many of the previously discussed principles of hypertension management.

The **Hypertension Treatment Template** addresses the following issues:

Hypertension Management

[Guidelines](#)

Patient
Age **Sex**

Beginning Blood Pressure
Highest Blood Pressure

Vital Signs
 Blood Pressure [Pulse Pressure](#)
 Trial 1 /
 Trial 2 /
 Trial 3 /
 Pulse
 Height inches
 Weight pounds
 BMI
 Body Fat %
 Waist inches
 Hips inches
 Ratio
 Fram CVD 10-Yr Risk %
 Fram Stroke 10-Yr Risk %
 Global Cardio Risk
 Metabolic Syndrome - ☐ + ☐

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
 Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
 Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Blood Pressure Classification

 Recommended Follow-Up

 Risk Group

 Treatment Based on Risk Assessment

Navigation
☒ HPT ☐ General

Home
[Lifestyle Changes](#)
[Dippers and White Coat](#)
[HPT and Diabetes](#)
[HPT and Depression](#)
[HPT and the Elderly](#)
[HPT, Insulin Resistance](#)
[Isolated Systolic HPT](#)
[HPT and Kidney Disease](#)
[Evaluation](#)
[Diagnosis and Screening](#)
[Treatment](#)
[HPT Plan](#)
[Physician Role](#)

Patient Information

Physician Information
[Classification](#)
[Risk Stratification](#)

- You need one drug for every 10 mm Hg of systolic blood pressure reduction
- The vast majority of patients will need two, three or possibly four medications.
- Drugs that confer an additional cardiovascular benefit beyond direct blood pressure effects are particularly attractive options.
- Data from seven landmark trials found that between 2.5 and 4.0 antihypertensive agents were required to bring blood pressure to target.

Five steps to Hypertensive control

1. Begin and/or continue lifestyle modifications
2. Goal Blood pressure

Note that the goal blood pressure is lower in a patient with diabetes and renal disease: 110/70 or lower.

3. Initial Drug Choice

Select one of the following (when one of the below is selected by checking in the box next to it), Recommended Drug(s) will appear on the template.

- a. Uncomplicated Hypertension
- b. Type 1 Diabetes w/proteinuria
- c. Heart Failure
- d. Isolated Systolic hypertension

Hypertension Treatment

[Return](#)

- You need one drug for every 10 mm Hg of systolic blood pressure reduction.
- The vast majority of patients will need two, three or possibly four medications.
- Drugs that confer an additional cardiovascular benefit beyond direct blood pressure effects are a particularly attractive option.
- Data from seven landmark trials found that between 2.5 and 4.0 antihypertensive agents were required to bring blood pressure to target.

1. Begin and/or continue lifestyle modifications.

2. Goal blood pressure < 140 / < 90 mmHg NOT achieved.
Note that the goal blood pressure is lower in patients with diabetes and renal disease.

3. Initial Drug Choice **Recommended Drug(s)**

Select one of the following...

- ☐ Uncomplicated Hypertension
- ☐ Type 1 Diabetes w/proteinuria
- ☐ Heart Failure
- ☐ Isolated Systolic Hypertension
- ☐ History of MI

4. Goal blood pressure NOT achieved. **Recommended Action**

Select one of the following...

- ☐ No response or troublesome side effects
- ☐ Inadequate response but drug tolerated

5. Goal blood pressure NOT achieved.
Continue to add agents from other classes; consider referral to a hypertension specialist.

Diseases and Drug Choices

Unfavorable Treatment Effects

Select one of the following

93 of 112

Hypertension Treatment

- You need one drug for every 10 mm Hg of systolic blood pressure reduction.
- The vast majority of patients will need two, three or possibly four medications.
- Drugs that confer an additional cardiovascular benefit beyond direct blood pressure effects are a particularly attractive option.
- Data from seven landmark trials found that between 2.5 and 4.0 antihypertensive agents were required to bring blood pressure to target.

Return

1. Begin and/or continue lifestyle modifications.

2. Goal blood pressure < 140 / < 90 mmHg NOT achieved.

Note that the goal blood pressure is lower in patients with diabetes and renal disease.

3. Initial Drug Choice

Recommended Drug(s)

Select one of the following...

- ☐ Uncomplicated Hypertension
- ☐ Type 1 Diabetes w/proteinuria
- ☐ Heart Failure
- ☐ Isolated Systolic Hypertension
- ☐ History of MI

4. Goal blood pressure NOT achieved.

Recommended Action

Select one of the following...

- ☐ No response or troublesome side effects
- ☐ Inadequate response but drug tolerated

5. Goal blood pressure NOT achieved.

Continue to add agents from other classes; consider referral to a hypertension specialist.

Diseases and Drug Choices

Unfavorable Treatment Effects

1. Goal Blood Pressure NOT achieved

Continue to add agents from other classes, consider referral to a hypertension specialist.

There are two pop-ups on this template:

- **Diseases and Drug choices** - there is a box which when accessed displays the following pick list. When one of the disease states is selected, the second box displays the optimal medicine for treating hypertension in this circumstance.

Risk/Factors Diseases

1. African-American
2. Angina
3. Atrial Fibrillation
4. Caucasian
5. CHF
6. Chronic Renal Failure
7. Cough Caused by ACE Inhibitors
8. Diabetes w/Nephropathy
9. Diabetes w/o Nephropathy
10. Diabetes w/o Nephropathy w/Systolic HPT
11. Dyslipidemia
12. History of MI

-
- Dm Hpt Recs**
- ## Considerations in the Individualization of Antihypertensive Therapy
- Select a Risk Factor/Disease from the picklist and view the available information.
- Risk Factors/Diseases**
- Preferred Therapy**
- Alternative Therapy**
- Avoid Therapy**
- OK Cancel
- 5. Goal blood pressure NOT achieved.**
- Continue to add agents from other classes; consider referral to a hypertension specialist.
- Diseases and Drug Choices Unfavorable Treatment Effects

- 95 of 112

2. Beta-blockers should generally be avoided in individuals who have asthma, reactive airways disease, or second or third degree heart block.
3. Angiotensin converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) should not be given to women likely to become pregnant.
4. ACEI-induced angioedema occurs 2-4 times more frequently in African American patients with hypertension than in other groups.
5. Aldosterone antagonists and potassium-sparing diuretics can cause hyperkalemia and should generally be avoided in patients who have serum potassium values more than 5.0 mEq/L while not taking medications.
6. The initiation of drug therapy with more than one agent may increase the likelihood of achieving the blood pressure goal in a more timely fashion, but particular caution is advised in those at risk for orthostatic hypotension, such as patients with older persons.

Dm Hpt Uaffects

Unfavorable Effects of Antihypertensive Drugs and Other Comorbidities

- ☐ Thiazide diuretics should be used cautiously in patients who have gout or who have a history of significant hyponatremia.
- ☐ Beta-blockers should generally be avoided in individuals who have asthma, reactive airways disease, or second or third degree heart block.
- ☐ Angiotensin converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) should not be given to women likely to become pregnant.
- ☐ ACEI-induced angioedema occurs 2-4 times more frequently in African American patients with hypertension than in other groups.
- ☐ Aldosterone antagonists and potassium-sparing diuretics can cause hyperkalemia and should generally be avoided in patients who have serum potassium values more than 5.0 mEq/L while not taking medications.
- ☐ The initiation of drug therapy with more than one agent may increase the likelihood of achieving the blood pressure goal in a more timely fashion, but particular caution is advised in those at risk for orthostatic hypotension, such as patients with diabetes, autonomic dysfunction, and some older persons.

OK Cancel

Diseases and Drug Choices **Unfavorable Treatment Effects**

Hypertension Plan Template

Hypertension Management
Guidelines

Patient RichmondPROL Ztest
Age 35 **Sex** M

Beginning Blood Pressure / / 0 / 0
Highest Blood Pressure / / 0 / 0

Vital Signs
Blood Pressure / / 0
Pulse Pressure / / 0
Trial 1 / / 0
Trial 2 / / 0
Trial 3 / / 0
Pulse / / 0
Height / inches
Weight / pounds
BMI /
Body Fat / %
Waist 1234.1 inches
Hips / inches
Ratio .00
Fram.CVD 10-Yr Risk / %
Fram. Stroke 10-Yr Risk 0 %
Global Cardio Risk .0
Metabolic Syndrome - +
Vitals Over Time

Major Risk Factors
☒ Tobacco Use
☐ Dyslipidemia
☐ Diabetes Mellitus
Family Hx of CV Disease
☐ Male < 55
☐ Female < 65
Sex
☒ Male
☐ Postmenopausal Female

Additional Risk Factors
☐ CHF
☐ CAD
☐ TIA
☐ Stroke
☐ Peripheral Vascular Disease
☐ Renal Insufficiency
☐ Retinopathy

Calculate Assessment
Blood Pressure Classification
Recommended Follow-Up
Risk Group
Treatment Based on Risk Assessment
Lab Results
Labs Over Time

Navigation
☒ HPT ☐ General
Home
Lifestyle Changes
Dippers and White Coat
HPT and Diabetes
HPT and Depression
HPT and the Elderly
HPT, Insulin Resistance
Isolated Systolic HPT
HPT and Kidney Disease
Evaluation
Diagnosis and Screening
Treatment
HPT Plan
Physician Role
Patient Information
Click for Documents
Physician Information
Classification
Risk Stratification

This template facilitates the documentation of the plan which has been developed by the working through of the Hypertension Suite of Templates.

The **Hypertension Plan Template** is divided into three columns:

Column 1 -

Laboratory - these labs can be ordered from the Hypertension Plan Template and charge posted as well

- CBC
- BMP
- Uric Acid
- Urinalysis
- Micral Strip
- Spot A/C Ratio
- Lipid Profile
- Plasma Renin Activity
- Thyroid Profile

Hypertension Plan

Laboratory

Ordering Provider

☐ CBC
☐ BMP
☐ Uric Acid
☐ Urinalysis
☐ Micral Strip
☐ Spot A/C Ratio
☐ Lipid Profile w/LDL
☐ Plasma Renin Activity
☐ Thyroid Profile
☐ Venipuncture

Procedures

☐ EKG
☐ Echocardiogram
☐ Renal Artery Ultrasound
☐ Renal Ultrasound
☐ Ambulatory BP Monitoring

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

General/Dosing Information

Double-Click to Order Meds

Brand Name

Double-Click for Referrals

Priority	Referring First	Referring Last	Referral
Routine	Asad	Abbas	Showing

Return

Comments

Follow-Up Doc

Document

Information (Auto-Print)

HPT Medications

Antihistamines

Cautions About OTC Meds

OTC Meds and Hypertension

Assessment

Dx1

Dx2

Dx3

EM Coding

Follow Up

Acute

Routine

Call Your Doctor If...

Take Care of Yourself

OTC Medications

Procedures - these procedures and tests can be ordered and charge posted from the Hypertension Plan Template.

- EKG
- Echocardiogram
- Renal Artery Ultrasound
- Renal Ultrasound
- Ambulatory BP Monitoring

Hypertension Plan

Laboratory

Ordering Provider

☐ CBC

☐ BMP

☐ Uric Acid

☐ Urinalysis

☐ Micral Strip

☐ Spot A/C Ratio

☐ Lipid Profile w/LDL

☐ Plasma Renin Activity

☐ Thyroid Profile

☐ Venipuncture

Procedures

☐ EKG

☐ Echocardiogram

☐ Renal Artery Ultrasound

☐ Renal Ultrasound

☐ Ambulatory BP Monitoring

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

mg

General/Dosing Information

Double-Click to Order Meds Double-Click for Referrals

Brand Name	Priority	Referring First	Referring Last	Referral
	Routine	Asad	Abbas	Showing

Return

Comments

Follow-Up Doc

Document

Assessment

Dx1

Dx2

Dx3

EM Coding

Follow Up

Acute

Routine

Call Your Doctor If...

Take Care of Yourself

OTC Medications

Information (Auto-Print)

HPT Medications

Antihistamines

Cautions About OTC Meds

OTC Meds and Hypertension

Assessment - this makes it possible to select the appropriate ICD-9 codes from the Hypertension Plan Template.

Dx1 - this first diagnosis box has a pick list made up only of hypertension ICD-9 Codes

DX2 - these next two have pick list made up of all of SETMA's ICD-9 codes

Dx3

Hypertension Plan

Laboratory

Ordering Provider

☐ CBC

☐ BMP

☐ Uric Acid

☐ Urinalysis

☐ Micral Strip

☐ Spot A/C Ratio

☐ Lipid Profile w/LDL

☐ Plasma Renin Activity

☐ Thyroid Profile

☐ Venipuncture

Procedures

☐ EKG

☐ Echocardiogram

☐ Renal Artery Ultrasound

☐ Renal Ultrasound

☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

EM Coding

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

Double-Click to Order Meds Double-Click for Referrals

Brand Name	Priority	Referring First	Referring Last	Referral
<input type="text"/>	Routine	Asad	Abbas	Showing

Information (Auto-Print)

Follow Up

Acute

Routine

Submit Charge Posting - Once the Assessment is completed and the laboratory and procedures have been selected, depressing this button completes charge posting, sending the orders to the lab, x-ray, etc., and putting this data on the patient's chart note.

E & M Coding - This links the provider to the E&M Charge posting template. For more information on Charge posting go to [Charge Posting Tutorial](#) or E & M Coding go to [E & M Coding](#).

Column 2 -

Medications -- There are four sets of boxes where medications can be added, increased, decreased. The pick list which is attached to these boxes is:

Hypertension Plan

Laboratory

Ordering Provider

- ☐ CBC
- ☐ BMP
- ☐ Uric Acid
- ☐ Urinalysis
- ☐ Micral Strip
- ☐ Spot A/C Ratio
- ☐ Lipid Profile w/LDL
- ☐ Plasma Renin Activity
- ☐ Thyroid Profile
- ☐ Venipuncture

Procedures

- ☐ EKG
- ☐ Echocardiogram
- ☐ Renal Artery Ultrasound
- ☐ Renal Ultrasound
- ☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

General/Dosing Information

Double-Click to Order Meds Double-Click for Referrals

Brand Name	Priority	Referring First	Referring Last	Referral
<input type="text"/>	Routine	Asad	Abbas	Showing
<input type="text"/>				

Return

Comments

Follow-Up Doc

Document

Information (Auto-Print)

HPT Medications

Antihistamines

Cautions About OTC Meds

OTC Meds and Hypertension

Follow Up

Acute

Routine

Call Your Doctor If...

Take Care of Yourself

OTC Medications

EM Coding

Hypertension Plan

Laboratory

Ordering Provider

- ☐ CBC
- ☐ BMP
- ☐ Uric Acid
- ☐ Urinalysis
- ☐ Micral Strip
- ☐ Spot A/C Ratio
- ☐ Lipid Profile w/LDL
- ☐ Plasma Renin Activity
- ☐ Thyroid Profile
- ☐ Venipuncture

Procedures

- ☐ EKG
- ☐ Echocardiogram
- ☐ Renal Artery Ultrasound
- ☐ Renal Ultrasound
- ☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

General/Dosing Information

Double-Click to Order Meds
Double-Click for Referrals

Brand Name	Priority	Referring First	Referr
<input style="width: 100%;" type="text"/>	Routine	Asad	Abbas

Follow Up

Acute

Routine

Call Your

Take Care

OTC Me

EM Coding

HPT Medications

ACE Inhibitors **

Accupril

Altace

Capoten

Lotensin

Mavik

Monopril

Prinivil

Univasc

Vasotec

Zestril

**** Adrenergic Inhibitors ****

Aldomet

Cardura

Catapres

Catapres TTS

Hylorel

Hytrin

Ismelin

Minipress

Tenex

Wytenzin

**** Angiotensin II Receptor Blockers ****

Avapro

Cozaar

Diovan

**** Beta Blockers ****

Blocarden

Cartrol

Coreg

Corgard

Inderal

Inderal LA

Kerlone

Levitol

Lopressor

Normodyne

Sectral

Tenormin

Toprol XL

Trandate

Visken

Zebeta

**** Calcium Blockers ****

Adalat CC

Calan

Calan SR

Cardene

Cardene SR

Close

- **ACE Inhibitors**
 - a. Accupril
 - b. Altace
 - c. Capoten
 - d. Lotensin
 - e. Mavik
 - f. Monopril
 - g. Prinivil
 - h. Univasc
 - i. Vasotec
 - j. Zestril

- **Adrenergic Inhibitors**
 - a. Aldomet
 - b. Cardura
 - c. Catapres
 - d. Catapres TTS
 - e. Hylorel
 - f. Hytrin
 - g. Ismelin
 - h. Minipress
 - i. Tenex
 - j. Wytensin
- **Angiotensin II Receptor Blockers**
 - a. Avapro
 - b. Cozaar
 - c. Diovan
- **Beta Blockers**
 - a. Blocarden
 - b. Cartrol
 - c. Coreg
 - d. Corgard
 - e. Inderal
 - f. Inderal LA
 - g. Kerlone
 - h. Levatol
 - i. Lopressor
 - j. Normodyne
 - k. Sectral
 - l. Tenormin
 - m. Toprol XL
 - n. Trandate
 - o. Visken
 - p. Zebeta
- **Calcium Blockers**
 - a. Adalat CC
 - b. Calan
 - c. Calan SR
 - d. Cardene
 - e. Cardene SR
 - f. Cardizem CD
 - g. Cardizem SR
 - h. Covera-HS
 - i. Dilacor XR
 - j. DynaCirc

- k. DynaCirc CR
- l. Isoptin
- m. Isoptin SR
- n. Norvasc
- o. Plendil
- p. Procardia XL
- q. Sular
- r. Tiazac
- s. Verelan

- **Oral Diuretics**

- a. Aldactazide-25
- b. Aldactazide-50
- c. Aldactone
- d. Bumex
- e. Damadex
- f. Diucardin
- g. Diuril
- h. Dyazide
- i. Dyrenium
- j. Edecrin
- k. Enduron
- l. Esidrix
- m. HydroDiuril
- n. Hygroton
- o. Lasix
- p. Lozol
- q. Maxzide
- r. Maxzide-25
- s. Microzide
- t. Midamor
- u. Moduretic
- v. Mykrox
- w. Naturetin
- x. Oretic
- y. Thalitone
- z. Zaroxolyn

- **Vasodilators**

- a. Apresoline
- b. Loniten

Hypertension Plan

Laboratory

Ordering Provider

- ☐ CBC
- ☐ BMP
- ☐ Uric Acid
- ☐ Urinalysis
- ☐ Micral Strip
- ☐ Spot A/C Ratio
- ☐ Lipid Profile w/LDL
- ☐ Plasma Renin Activity
- ☐ Thyroid Profile
- ☐ Venipuncture

Procedures

- ☐ EKG
- ☐ Echocardiogram
- ☐ Renal Artery Ultrasound
- ☐ Renal Ultrasound
- ☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

EM Coding

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

General/Dosing Information

Double-Click to Order Meds Double-Click for Referrals

Brand Name	Priority	Referring P
<input type="text"/>	Routine	Asad

Follow Up

Acute

Routine

Dose (mg)

0	00	.00	10	15	20
.25	.50	.75	25	30	40
1	2	3	50	60	70
4	5	6	80	90	100
7	8	9	200	300	400
+	-	.	500	600	700

Clear

OK Cancel

Return

Comments

to-Print)

ions

ies

TC Meds

ertension

Hypertension Plan

Laboratory

Ordering Provider

- ☐ CBC
- ☐ BMP
- ☐ Uric Acid
- ☐ Urinalysis
- ☐ Micral Strip
- ☐ Spot A/C Ratio
- ☐ Lipid Profile w/LDL
- ☐ Plasma Renin Activity
- ☐ Thyroid Profile
- ☐ Venipuncture

Procedures

- ☐ EKG
- ☐ Echocardiogram
- ☐ Renal Artery Ultrasound
- ☐ Renal Ultrasound
- ☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

EM Coding

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease mg

General/Dosing Information

Double-Click to Order Meds Double-Click for Referrals

Brand Name	Priority	Referring First	Referring Last	Re
<input type="text"/>	Routine	Asad	Abbas	Sh

Follow Up

Acute

Routine

SMBG

BID

QD

QOD

TID

Close

Return

Comments

Follow Up Doc

Print)

s

Meds

ension

Call Your Doctor If...

Take Care of Yourself

OTC Medications

General/Dosing Information

Hypertension Plan

Provider: **ah** | **Dia**

Medications

☐ Continue current medications

☐ Begin ☐ Increase ☐ Decrease mg

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

☐ Begin ☐ Increase ☐ Decrease

General/Dosing Information

Return

Comments

Follow-Up Doc

Document

Dm Hpt Meds

Hypertension Medication Information

1. Select the class of medication.

☐ [ACE Inhibitors](#) ☐ [Angiotensin II Receptor Blockers](#) ☐ [Calcium Blockers](#) ☐ Vasodilators

☐ [Adrenergic Inhibitors](#) ☐ [BETA Blockers](#) ☐ Combination Drugs ☐ Oral Diuretics

2. Select the medication that you are interested in viewing.

3. Review the available information.

Usual Dose	Selected Adverse Effects	Comments	Contraindications
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

OK **Cancel**

This is an electronic PDR where a class of drugs can be chosen from:

- Ace Inhibitors
- Adrenergic Inhibitors
- Angiotensin II Receptor Blockers
- Beta Blockers

- Calcium Blockers
- Combination Drugs
- Vasodilators
- Oral Diuretics

Once the class of drugs is chosen, the available drugs from that class are displayed. When you select one of those drugs by check the box beside it, the following information is displayed:

- Usual Dosage
- Selected Adverse Effects
- Comments
- Contraindications

Beneath this function are links to the:

- Medication Module
- Referrals Template

Follow-up

- Acute
- Routine

Hypertension Plan

Laboratory

Ordering Provider
Abochamah **Dia**

- ☐ CBC
- ☐ BMP
- ☐ Uric Acid
- ☐ Urinalysis
- ☐ Micral Strip
- ☐ Spot A/C Ratio
- ☐ Lipid Profile w/LDL
- ☐ Plasma Renin Activity
- ☐ Thyroid Profile
- ☐ Venipuncture

Procedures

- ☐ EKG
- ☐ Echocardiogram
- ☐ Renal Artery Ultrasound
- ☐ Renal Ultrasound
- ☐ Ambulatory BP Monitoring

Assessment

Dx1

Dx2

Dx3

Medications

☐ Continue current medications

<input type="radio"/> Begin <input type="radio"/> Increase <input type="radio"/> Decrease	<input type="text"/>	<input type="text"/>	mg	<input type="text"/>
<input type="radio"/> Begin <input type="radio"/> Increase <input type="radio"/> Decrease	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="radio"/> Begin <input type="radio"/> Increase <input type="radio"/> Decrease	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="radio"/> Begin <input type="radio"/> Increase <input type="radio"/> Decrease	<input type="text"/>	<input type="text"/>		<input type="text"/>

General/Dosing Information

Double-Click to Order Meds

Brand Name	<input type="text"/>	<input type="text"/>	<input type="text"/>
Priority	Routine	Referring First	Referring Last
		Asad	Abbas
			Showing

Double-Click for Referrals

Brand Name	<input type="text"/>	<input type="text"/>	<input type="text"/>
Priority	Routine	Referring First	Referring Last
		Asad	Abbas
			Showing

Information (Auto-Print)

Follow Up

Acute

Routine

There are then three Pop-ups with the following content. Each of these prints on the **Hypertension Follow-up Note** automatically.

- **Call Your Doctor if.** -- If you have any of the following symptoms between appointments, you should call your doctor immediately.
 - a. Severe Headache
 - b. Excessive Tiredness
 - c. Confusion
 - d. Visual Changes
 - e. Nausea or Vomiting
 - f. Chest Pain
 - g. Shortness of Breath
 - h. Significant Sweating

Dm Hpt Callhelp

Reasons To Call Your Doctor

If you have any of the following symptoms between appointments, you should call your doctor immediately.

- ☒ Severe Headache
- ☒ Excessive Tiredness
- ☒ Confusion
- ☒ Visual Changes
- ☒ Nausea or Vomiting
- ☒ Chest Pain
- ☒ Shortness of Breath
- ☒ Significant Sweating

Dx1 Acute Call Your Doctor If...
 Dx2
 Dx3 Routine

- **How Can I Take Care of Myself?**
 1. Take your medications as prescribed. -- Don't abruptly stop or decrease your medications without asking your doctor. It is dangerous to stop taking certain blood pressure medications suddenly.
 2. Monitor your blood pressure regularly. -- You can do it yourself or have your doctor or other health care professional do it. Keep a chart of the readings.
 3. If you smoke, quit.
 4. Reduce salt intake according to your doctor's prescription.

5. Start exercising regularly, with your doctor's approval.
6. If you are overweight, lose weight.
7. Limit the amount of alcohol your drink.
8. Reduce stress or learn to use stress management techniques.
9. See your doctor or health care professional as often as he or she recommends.

Dm Hpt Takecare

How Can I Take Care of Myself?

- ☒ Take your medications as prescribed.
Don't abruptly stop or decrease your medications without asking your doctor. It is dangerous to stop taking certain blood pressure medications suddenly.
- ☒ Monitor your blood pressure regularly.
You can do it yourself or have your doctor or other health care professional do it. Keep a chart of the readings.
- ☒ If you smoke, quit.
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- ☒ Limit the amount of alcohol your drink.
- ☒ Reduce stress or learn to use stress management techniques.
- ☒ See your doctor or health care professional as often as he or she recommends.

OK Cancel

Dx2

Dx3

Submit Charge Posting EM Coding Routine

Doctor If...

Take Care of Yourself OTC Medications

- **Over-the-Counter Medications**

Points to Remember

1. Over the counter medications are drugs and are intended for short-term use.
2. Consult your physician before taking new medications.
3. Thoroughly read all package labeling, inserts, cautions and directions.
4. Never exceed maximum doses or maximum time limits for use.
5. Be alert for side effects.
6. Call a doctor immediately if you experience loss of consciousness, heart palpitations, shortness of breath or trouble breathing, rash or itching, swelling of the throat or face or any other abnormal effect.
7. If symptoms you are treating persist, see your doctor.

Hypertension Plan

Dm Hpt Otcmeds [X]

Over-the-Counter Medications

Points to Remember

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Dx1 Acute

Dx2

Dx3 Routine

Referring Last Referral

Abbas Showing

mg

Information (Auto-Print)

Column 3 -

- **Return** - this takes you back to the Hypertension Master Template.
- **Comments** - this allows for free text comments which do not logically fit anywhere else.
- **Follow-up Doc** - this creates the Hypertension Follow-up Document which should then be given to the patient.
- **Document** - this creates the Hypertension Chart Note

Information

- **HPT Medications** - when this button is depressed it launches a list of documents on the following medications, each of which can be printed.
 1. ACE Inhibitors and Angiotensin II Blockers
 2. Adrenergic Inhibitors
 3. Beta Blockers
 4. Calcium Channel Blockers
 5. Combination Drugs
 6. Oral Diuretics
 7. Vasodilators
- Antihistamines
- Cautions About OTC Meds
- OTC Meds and Hypertensions

Physician Role Template

The screenshot displays the 'Hypertension Management' software interface. A central dialog box titled 'Dm Hpt Check' and 'Physician Role in Hypertension Management' is open. The dialog contains a list of 8 checkboxes for data collection. The background interface includes patient information (RichmondPROI, Ztest, Age 35, Sex M), vital signs input fields, risk calculators (Fram CVD 10-Yr Risk, Fram Stroke 10-Yr Risk, Global Cardio Risk), and a navigation pane on the right with a red box around the 'Physician Role' button.

Hypertension Management

Patient: RichmondPROI Ztest
Age: 35 Sex: M

Vital Signs

Blood Pressure
Trial 1: /
Trial 2: /
Trial 3: /

Pulse:
Height:
Weight:
BMI:
Body Fat:
Waist: 1234.1
Hips: 1234.1
Ratio: .00

Fram CVD 10-Yr Risk: %
Fram Stroke 10-Yr Risk: 0 %
Global Cardio Risk: .0
Metabolic Syndrome: - +

Physician Role in Hypertension Management

- ☐ Blood pressure measured at least once this visit
- ☐ Blood pressure measurement repeated if elevated
- ☐ Blood pressure classification determined
- ☒ Weight reduction discussed/recommended
- ☒ Sodium intake discussed/changes recommended
- ☒ Alcohol intake discussed/changes recommended
- ☒ Exercise discussed/recommended
- ☐ Appropriate follow-up scheduled

OK Cancel

Lab Results
Labs Over Time

Navigation

☒ HPT ☐ General

Home
Lifestyle Changes
Dippers and White Coat
HPT and Diabetes
HPT and Depression
HPT and the Elderly
HPT, Insulin Resistance
Isolated Systolic HPT
HPT and Kidney Disease
Evaluation
Diagnosis and Screening
Treatment
HPT Plan
Physician Role

Patient Information
Click for Documents

Physician Information
Classification
Risk Stratification

As the provider progresses through SETMA's Hypertension Suite of Templates, this template automatically collects the data points for the **Physician Consortium for Performance Improvement Data** for quality of care in hypertension management. A review of this template will allow a provider to see "how he/she is doing," as measured against a national standard of care in hypertensive management. The standard of excellence in the management of hypertension is measured on the following 8 data points.

Physician Role in Hypertension Management

- Blood pressure measured at least once this visit
- Blood pressure measurement repeated if elevated
- Blood pressure classification determined
- Weight reduction discussed/recommended
- Sodium intake discussed/changes recommended
- Alcohol intake discussed/changes recommended
- Exercise discussed/recommended
- Appropriate follow-up scheduled

The Physician Consortium for Performance Improvement

The Physician Consortium for Performance Improvement (Consortium) is a group of clinical and methodological experts convened by the AMA. The Consortium includes representatives from more than 60 national medical specialty and state medical societies, the Agency for Healthcare Research and Quality, and the Centers for Medicare and Medicaid Services.

The Consortium's vision is to fulfill the responsibility of physicians to patient care, public health, and safety by:

- becoming the leading source organization for evidence-based clinical performance measures and outcomes reporting tools for physicians; and
- ensuring that all components of the medical profession have a leadership role in all national forums seeking to evaluate the quality of patient care.

The Consortium's mission is to improve patient health and safety by:

- identifying and developing evidence-based clinical performance measures that enhance quality of patient care and that foster accountability;
- promoting the implementation of effective and relevant clinical performance improvement activities; and
- advancing the science of clinical performance measurement and improvement.

The Consortium works to develop evidence-based clinical performance measures and clinical outcomes reporting tools to support physicians in quality improvement efforts.

The Consortium has published a number of disease management data sets which established quality of care measures with which physicians and other healthcare providers can measure their own performance.