

STANDARDIZED PROCEDURE

Section Interdisciplinary Practice Committee	NUMBER	
Title PROTOCOL FOR UNCOMPLICATED HYPERTENSION: REGISTERED NURSE TITRATION OF LISINAPRIL, HYDROCHLOROTHIAZIDE, ATENOLOL AND AMLODIPINE	EFFECTIVE DATE	6/2004
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DESCRIPTION:

1. Function:

- 1.1. This protocol describes the functions, which may be performed by Registered Nurses in managing uncomplicated hypertension in adults ages 18 and older.

2. Definitions and criteria

- 2.1. Hypertension: Patients who have been diagnosed by a physician with hypertension, systolic / diastolic blood pressure levels above 139/89 or above 129/79 in patients with Diabetes. or Chronic Kidney Disease.
- 2.2. Uncomplicated hypertension is Stage 1 or Stage 2 hypertension without any of the following co-morbidities: Coronary Artery Disease, Stage 4 Chronic Kidney Disease, Heart Failure, or pregnancy.

3. Treatment Goal

- 3.1. Treatment goal is to achieve BP of less than or equal to 139/89 times one
- 3.2. Treatment goal for patients with Diabetes, or Chronic Kidney Disease Stage 1-3 is to achieve BP of less than or equal to 129/79 times one.
- 3.3. Treatment goal for self monitored blood pressure trends is to achieve a mean BP of less than 135/85 or less than 125/75 for patients with Diabetes, or Chronic Kidney Disease Stage 1-3.

REQUIREMENTS:

1. Patient Condition: Inclusion criteria -

- 1.1. Uncomplicated hypertension and hypertension with stage 1-3 chronic kidney disease, diabetes mellitus, stroke, or transient ischemic attack
- 1.2. Adult, aged 18 and older
- 1.3. On only one or two of the following medications at time of authorization: Hydrochlorothiazide, Lisinopril, Lisinopril/Hydrochlorothiazide, Amlodipine or Atenolol. May be on other anti-hypertensive medications other than those listed which will not be titrated.
- 1.4. Referring physician is responsible for initiating Hydrochlorothiazide, Lisinopril or Lisinopril / Hydrochlorothiazide and
 - 1.4.1. Evaluate for intolerance manifested by hyponatremia: Women age greater than or equal to 70 years should have Serum Sodium checked 5 days after first dose. Hydrochlorothiazide should be discontinued for a Serum Sodium less than 135 mEq/L. Order Serum Potassium and Serum Creatinine to be checked at same time as Serum Sodium for this group.
 - 1.4.2. Order Serum Potassium and Serum Creatinine to be drawn 2 weeks after first dose, if not in group 1.4.1
- 1.5. Exclusion criteria: Coronary artery disease, stage 4 chronic kidney disease, heart failure, or pregnancy.

2. Patient Education:

- 2.1. Lifestyle Modifications
 - 2.1.1. Physical activity (30 minutes, greater than or equal to 4 times per week)
 - 2.1.2. Weight management (goal BMI less than 25 kg/m²)
 - 2.1.3. Reducing dietary sodium (1.8 to 2.4 gram sodium daily)
 - 2.1.4. Limiting alcohol consumption (not more than than 1 drink for women, or not more than than 2 drinks for men per day)
 - 2.1.5. Low-fat, calcium, high fruit and vegetable diet (e.g. the "DASH" diet)
 - 2.1.6. Smoking cessation
- 2.2. Self-monitoring blood pressure and documentation with use of benchmark KP apparatus: Lifesource UA-767 plus

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- 2.2.1. Instruct patient to take two (2) BP readings between 6 am – 10 am and another two (2) BP readings between 6 pm – 10 pm, for three days during the third (3rd) week following medication adjustment.
- 2.3. Women of childbearing age: Reminder that Lisinopril is contraindicated in pregnancy. Women pregnant or with child bearing potential (those actively using oral contraception, condoms, diaphragms, other barrier techniques, or withdrawal) are excluded from this protocol. Women with unexpected pregnancy on Lisinopril are to discontinue Lisinopril/Hydrochlorothiazide or lisinopril and notify their physician.
3. **Procedure:**
 - 3.1. Subjective Assessment
 - 3.1.1. Complaints consistent with symptomatic hypotension: dizziness, syncope
 - 3.1.2. Side effects to medications: dizziness, persistent dry cough, fatigue, headache, edema (See Antihypertensive Medications Quick Reference in Appendix)
 - 3.1.3. Adherence with medications and lifestyle modification
 - 3.2. Objective Assessment
 - 3.2.1. Self monitored blood pressure trends: Average systolic BP readings to obtain a mean systolic measure. Average diastolic BP readings to obtain a mean diastolic measure
 - 3.2.2. Blood pressure sitting. If sitting systolic BP is higher than target and patient is 70 years of age or older, assess standing BP. If systolic BP is less than 110, assess standing BP. Base treatment on lowest BP, either sitting or standing.
 - 3.2.3. Side effects to medications (See Antihypertensive Medication Quick Reference in Appendix):
 - Serum potassium and serum sodium results done after initiation of lisinopril / hydrochlorothiazide
 - Rash, hypokalemia or hyponatremia from Hydrochlorothiazide
 - Angioedema, cough, hyperkalemia or hypotension from Lisinopril
 - Significant peripheral edema or flushing on Amlodipine
 - Bradycardia (HR < 55) on Atenolol
 - 3.3. Assessment / Plan
 - 3.3.1. **Blood Pressure 160 - 179 systolic and/or 100 - 109 diastolic**
 - Notify Primary Care Provider or designee.
 - Schedule follow up blood pressure check in 2 weeks instead of 4 weeks.
 - 3.3.2. **Blood Pressure greater than or equal to 180 systolic and/or 110 diastolic**
 - Refer to provider for evaluation. Do not release the patient
 - 3.3.3. **Symptomatic hypotension or asymptomatic with systolic BP < 100**
 - Decrease medication dosage back to previous dosage and message primary care provider If the patient has recently started the medication and there is no prior dose, hold the medication and message the primary care provider.
 - Recheck BP the following week, if hypotension continues, consult with physician.
 - 3.3.4. **Intolerance to Lisinopril / Hydrochlorothiazide**
 - Discontinue Lisinopril / Hydrochlorothiazide
 - Notify physician to determine if intolerance is due to the Hydrochlorothiazide or the Lisinopril or both and determine next steps.
 - Document Thiazide and/or ACEI Intolerance in medical record problem list, allergy / intolerance list and progress note based on physician determination of cause.
 - 3.3.5. **Hypokalemia, serum potassium 3.2 – 3.4 mEq/L on Lisinopril / Hydrochlorothiazide**
 - ADD KCl 20 mEq po daily or increase KCl by 20 mEq po daily per physician order

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- If no current prescription for potassium supplement, transmit order to pharmacy for: KCl 10 mEq, #200, sig: Take 2 tablets by mouth daily. Refills: 1 per physician order
 - If new prescription transmitted, cosign order in KP HealthConnect order entry for PCP order entry signoff
 - Repeat serum potassium in 2 weeks
 - If repeat serum potassium less than 3.2 mEq/L, notify physician.
- 3.3.6. Hyperkalemia, Serum potassium greater than 5.0 on Lisinopril / Hydrochlorothiazide**
- For potassium 5.0-5.5 mEq/L, remove all potassium supplementation, educate on low potassium diet and repeat K in one week; if not taking potassium supplementation, cut Lisinopril / Hydrochlorothiazide dose in half and repeat K in one week. If on lowest dosage of Lisinopril / Hydrochlorothiazide, discontinue medication and notify physician.
 - If K remains 5.0-5.5 mEq/L refer to physician to determine either how frequently to monitor K or to discontinue Lisinopril
 - For potassium greater than 5.5 mEq/L, notify physician.
- 3.3.7. Hyponatremia, Serum Sodium less than 134 mEq/L on Lisinopril / Hydrochlorothiazide**
- Notify physician.
- 3.3.8. Abnormal Serum Creatinine / GFR**
- Evaluate for exclusion criteria and consult with physician.
- 3.3.9. Pregnancy**
- Discontinue Lisinopril or Lisinopril/Hydrochlorothiazide and notify physician. Refer to OB GYN for management.
- 3.3.10. Intolerance to Atenolol**
- Discontinue Atenolol
 - Document Atenolol Intolerance in medical record problem list, allergy/intolerance list and in medical record progress note.
 - Notify physician.
 - Proceed on medication titration protocol to ADD: Amlodipine per physician order on Table 1: Medication adjustment scale
- 3.3.11. Intolerance to Amlodipine**
- Discontinue Amlodipine
 - Document Amlodipine Intolerance in problem list and in progress note.
 - Notify physician.
- 3.3.12. Increase medication dosage per table 1 if (1) patient compliant with medication regime (MRAR \geq 80% and DSR positive) and (2a) for clinic visit, sitting or standing SBP greater than 139 OR sitting or standing DBP greater than 89 (greater than 129/79 with diabetes or CKD, OR (2b) for phone or non-clinic visit contact, self monitored SBP mean greater than or equal to 135 OR self monitored DBP mean greater than or equal to 85 (greater than or equal to 125/75 with diabetes, or CKD). Order follow up serum potassium and creatinine 2 weeks following each uptitration of Prinzide. See Section 4: Patient Follow up for further instructions on results. Self monitored BP must be based on a validated home blood pressure machine.**

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Table 1: Medication adjustment scale (Appendix D: Medication Algorithm Diagram)

Assessment: Current medication	Plan: ACTION
Lisinopril/Hydrochlorothiazide is less than 20 mg/25 mg daily and is on other hypertension medications	Titrate Lisinopril/Hydrochlorothiazide to maximum dosage first per physician order, maintain other medications at current dose
Lisinopril/Hydrochlorothiazide 10 mg/12.5 mg ½ tablet daily	<ul style="list-style-type: none"> INCREASE: Lisinopril/Hydrochlorothiazide to 20 mg/25 mg ½ tablet daily per physician order Edit/Reorder Lisinopril / Hydrochlorothiazide in KP HealthConnect to transmit prescription change to pharmacy for Lisinopril / Hydrochlorothiazide 20 mg/25 mg tablet, #50, sig: Take ½ tablet by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. Recheck BP in 4 weeks
Lisinopril/Hydrochlorothiazide 20 mg/25 mg ½ tablet daily	<ul style="list-style-type: none"> INCREASE: Lisinopril/Hydrochlorothiazide to 20 mg/25 mg 1 tablet daily per physician order Edit/Reorder Lisinopril/Hydrochlorothiazide in KP HealthConnect to transmit prescription change to pharmacy for Lisinopril/Hydrochlorothiazide 20 mg/25 mg tablet, #100, sig: Take one tablet by mouth daily for high blood pressure. Refills: 1 Cosign to PCP. Recheck BP in 4 weeks
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 1 tablet daily	<ul style="list-style-type: none"> INCREASE: Lisinopril/Hydrochlorothiazide to 20 mg/25 mg 2 tablets daily Edit/Reorder Lisinopril/Hydrochlorothiazide in KP HealthConnect to transmit prescription change to pharmacy for Lisinopril/Hydrochlorothiazide 10 mg/25 mg tablet, #200, sig: Take two tablets by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily	<ul style="list-style-type: none"> Continue Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily ADD: Amlodipine 5 mg ½ tablet daily per physician order Enter order in KP HealthConnect to pharmacy for Amlodipine 5 mg tablet, #50, sig: Take ½ tablet by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily or Hydrochlorothiazide	<ul style="list-style-type: none"> Continue Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily and

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Assessment: Current medication	Plan: ACTION
50 mg daily or Lisinopril 40 mg daily and Amlodipine 5 mg ½ tablet daily	<ul style="list-style-type: none"> INCREASE: Amlodipine to 5 mg 1 tablet daily per physician order Edit/Reorder Amlodipine in KP HealthConnect to transmit prescription change to pharmacy for Amlodipine 5 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily or Hydrochlorothiazide 50 mg daily or Lisinopril 40 mg daily and Amlodipine 5 mg 1 tablet daily	<ul style="list-style-type: none"> Continue Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily and INCREASE: Amlodipine to 10 mg 1 tablet daily. Edit/Reorder Amlodipine in KP HealthConnect to transmit prescription change to pharmacy for Amlodipine 10 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily or Hydrochlorothiazide 50 mg daily or Lisinopril 40 mg daily and Amlodipine 10 mg daily and Heart Rate greater than or equal to 55 bpm	<ul style="list-style-type: none"> Continue Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily and Continue Amlodipine 10 mg daily and ADD: Atenolol 25 mg 1 tablet daily Enter order in KP HealthConnect to transmit prescription to pharmacy for Atenolol 25 mg, #100, sig: Take one tablet by mouth daily for high blood pressure. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily or Hydrochlorothiazide 50 mg daily or Lisinopril 40 mg daily and Amlodipine 10 mg daily and Atenolol 25 mg daily and heart rate greater than or equal to 55 bpm	<ul style="list-style-type: none"> Continue Lisinopril/Hydrochlorothiazide 20 mg/25 mg daily and Continue Amlodipine 10 mg daily and INCREASE: Atenolol to 50 mg daily per physician order Edit/Reorder in KP HealthConnect to transmit prescription change to pharmacy for Atenolol 50 mg, #100, sig: Take one tablet by mouth daily for high blood pressure. Cosign to PCP. Recheck BP in 4 weeks.
Lisinopril/Hydrochlorothiazide 20 mg/25 mg 2 tablets daily or Hydrochlorothiazide 50 mg daily or Lisinopril 40 mg daily and Amlodipine 10 mg daily and Atenolol 50 mg daily	<ul style="list-style-type: none"> Schedule appointment to follow up with Primary Care Provider for further management within 4 weeks if blood pressure still not at goal, or in 6 months if blood pressure is at goal.
Atenolol with heart rate less than or equal to 54 bpm	<ul style="list-style-type: none"> Reduce to previous dose or discontinue. Refer patient to PCP for further medication management.

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Table 2: Medication adjustment scale: No Lisinopril (Intolerant / Contraindicated)
(Appendix D: Medication Algorithm Diagram)

Assessment: Current medication	Plan: ACTION
Hydrochlorothiazide is less than 50 mg daily and is on other hypertension medications	Titrate Hydrochlorothiazide to maximum dosage first per physician order, maintain other medications at current dose
Hydrochlorothiazide 12.5 mg daily	<ul style="list-style-type: none"> • INCREASE: Hydrochlorothiazide to 25 mg 1 tablet daily per physician order • Edit/Reorder Hydrochlorothiazide in KP HealthConnect to transmit prescription change to pharmacy for Hydrochlorothiazide 25 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Cosign to PCP. • Recheck BP in 4 weeks
Hydrochlorothiazide 25 mg daily	<ul style="list-style-type: none"> • INCREASE: Hydrochlorothiazide to 50 mg 1 tablet daily per physician order • Edit/Reorder in KP HealthConnect to transmit prescription change to pharmacy for Hydrochlorothiazide 50 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. • Recheck BP in 4 weeks.
Hydrochlorothiazide 50 mg daily	<ul style="list-style-type: none"> • Continue Hydrochlorothiazide 50 mg daily • ADD: Amlodipine 5 mg ½ tablet daily per physician order • Enter order in KP HealthConnect to pharmacy for Amlodipine 5 mg tablet, #50, sig: Take ½ tablet by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. • Recheck BP in 4 weeks. • Refer to Amlodipine titration in Table 1 for further titration

Table 3: Medication adjustment scale: No Hydrochlorothiazide (Intolerant / Contraindicated) (Appendix D: Medication Algorithm Diagram)

Assessment: Current medication	Plan: ACTION
Lisinopril is less than 40 mg daily and is on other hypertension medications	Titrate Lisinopril to maximum dosage first per physician order, maintain other medications at current dose
Lisinopril 10 mg tablet daily	<ul style="list-style-type: none"> • INCREASE: Lisinopril to 20 mg 1 tablet daily per physician order • Edit/Reorder Lisinopril in KP HealthConnect to transmit prescription change to pharmacy for

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Assessment: Current medication	Plan: ACTION
	<ul style="list-style-type: none"> • Lisinopril 20 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Cosign to PCP. • Recheck BP in 4 weeks
Lisinopril 20 mg daily	<ul style="list-style-type: none"> • INCREASE: Lisinopril to 40 mg daily per physician order • Edit/Reorder Lisinopril in KP HealthConnect to transmit prescription change to pharmacy for Lisinopril 40 mg tablet, #100, sig: Take 1 tablet by mouth daily for high blood pressure. Cosign to PCP. • Recheck BP in 4 weeks
Lisinopril 40 mg daily	<ul style="list-style-type: none"> • Continue Lisinopril 40 mg daily • ADD: Amlodipine 5 mg ½ tablet daily per physician order • Enter order in KP HealthConnect to pharmacy for Amlodipine 5 mg tablet, #50, sig: Take ½ tablet by mouth daily for high blood pressure. Refills: 1. Cosign to PCP. • Recheck BP in 4 weeks. • Refer to Amlodipine titration in Table 1 for further titration

4. Patient Follow-up:

- 4.1. After each medication change: Recheck BP in 4 weeks. If BP 160 - 179/100 - 109, follow medication titration procedure, notify provider and schedule BP recheck in 2 weeks. If BP greater than 180/110, notify provider for intervention and schedule BP recheck in 2 days or per provider instruction.
- 4.2. Once the patient has reached BP less than 140 / 90 (less than 130/80 with Diabetes or CKD) or BP less than 135 / 85 (less than 125/75 with Diabetes or CKD) self-monitoring mean BP, the patient will no longer require follow up through this protocol and will be returned back to their Primary Care Provider for continued follow up in 6 months.
- 4.3. If the patient achieves maximum dosage of medications used in this protocol, and still does not achieve goals of BP less than 140 / 90, less than 130 / 80 with diabetes or CKD, or less than 135/85 for self-monitoring mean BP, the patient will be returned back to their Primary Care Provider for continued follow up in 4 weeks.
- 4.4. **Prinzide Titration:** Order follow up serum potassium and creatinine 2 weeks following each uptitration of Prinzide.
 - 4.4.1. Repeat serum creatinine in 2 weeks for any reduction in eGFR \geq 30% compared to the baseline eGFR (ie eGFR starts at 50% and repeat eGFR is \leq 35%).
 - 4.4.2. Notify PCP for consideration of Lisinopril dose reduction or discontinuation for any reduction in eGFR $>$ 30% from baseline.

PREPARATION:

1. **Education:** Nurses working under protocol must be licensed in California as Registered Nurses.

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2. **Training:** Nurses must successfully complete a mentoring session focusing on hypertension, with a primary care physician. The program will include assessment, assessing mean blood pressure trends, hypertension medication, patient education, and protocol use and documentation on six patient cases related to hypertension. Nurses must demonstrate competency in appropriate blood pressure measurement using both manual and automatic blood pressure apparatuses in both the sitting and standing patient positions which includes appropriate positioning and cuff size.
3. **Experience:** Experience using protocol with physician mentor on at least six patient cases.
4. **Minimum requirement:** Level 1 RN

EVALUATION:

1. **Initial Evaluation**
 - 1.1. Successful demonstration of clinical knowledge and skills required for the job as demonstrated by 6 cases followed and signed off by physician mentor as successfully completed per protocol.
 - 1.2. Evidence of successful completion will be documented and included in each individual nurse's personnel file. (See Appendix F)
2. **Ongoing Evaluation**
 - 2.1. Nursing Education will conduct annual competency evaluations documenting the RNs ability to function appropriately under protocol including annual competency of clinical knowledge, skills/procedures, appropriate consultation and documentation.
 - 2.2. Evidence of ongoing competency will be included in each individual nurse's personnel file.
3. **Maintaining written records of those persons authorized to perform the functions**
 - 3.1. All registered nurses working under procedure and protocols will be provided with a copy of the Standardized Procedure, Protocols, and local operational policies. Each registered nurse will complete a Statement of Acceptance acknowledging receipt of and agreeing to use the Standardized Procedure and Protocols. Local administration is responsible for maintaining documentation for each registered nurse working under protocol in the RNs personnel file. (Appendix B: Statement of Acceptance and Practice Approval)
 - 3.2. A list of Registered Nurses authorized to use this protocol is on file with the Department Administrator. (Appendix A)

SUPERVISION AND REVIEW:

1. **Roles and Responsibilities of Registered Nurses working under Protocol**
 - 1.1. RNs must verify that patients have a designated primary care provider and an established diagnosis that pertains to the protocol being used, and have been referred by a physician for management under protocols by Registered Nurses.
 - 1.1.1. The Registered Nurse will notify the primary care physician when someone other than the primary care physician identifies and refers new patients who meet protocol criteria. The primary care physician will decide whether or not the patient is appropriate for RN protocol management. If the provider determines that the patient is not appropriate for RN protocol management, then he/she will assume the responsibility for the patient's care.
 - 1.2. Registered nurses will collaborate and work in partnership with mentoring physician(s) and individual patients' primary care physicians to provide care under protocol.
 - 1.3. Registered nurses will introduce themselves utilizing their correct title and explain their role.
 - 1.4. Registered Nurse responsibilities: In accordance with protocol, registered nurses will:

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- 1.4.1. Collect subjective data (obtain history)
- 1.4.2. Collect objective data (perform physical examinations)
- 1.4.3. Order and interpret labs
- 1.4.4. Assess patient status
- 1.4.5. Develop and implement treatment and educational plan of care
- 1.4.6. RNs providing medication management must:
 - 1.4.6.1. Have primary care or mentoring physician initiate all new medication orders. This includes refills, which are considered new orders.
 - 1.4.6.2. Ensure that each patient has program authorization from a physician. (Appendix C: Authorization Form)
 - 1.4.6.3. Ensure that each patient has a patient specific, medication specific order from a prescribing physician, which includes dosage. The RN is then authorized to adjust patient specific protocol medication dosages per protocol. (Appendix D: Patient specific, Medication specific Authorization / Order)
 - 1.4.6.3.1. Patient specific, medication specific orders will not be authorized by RNPs or Physician's Assistants.
- 1.4.7. Ensure appropriate follow-up

2. Roles and responsibilities of primary care mentoring physicians or primary care physician designated as responsible for patient management

- 2.1. Physicians are responsible for supervising registered nurses utilizing Standardized Procedure and Protocols.
- 2.2. Physicians will be available for consultation and collaboration with registered nurse.
 - 2.2.1. When the patient is receiving care in the medical office, a physician must be on-site and readily available to provide assistance and direction.
- 2.3. The mentoring physician is responsible for assuring there is a physician available when:
 - 2.3.1. The nurse requests the physician to see the patient; e.g. the patient is not responding to therapy.
 - 2.3.2. The patient requests to see the physician.
 - 2.3.3. There is an onsite emergency situation.
 - 2.3.4. The nurse needs to consult with a physician.
- 2.4. The physician will see the patient or review the care at least once a year and renew the patient specific, medication specific order on an annual basis if the patient continues to be managed under this protocol.

COMMUNICATION:

1. Consultation and Referrals:

- 1.1. Registered nurses will consult with mentoring physician, primary care provider or designated physician whenever situations arise that go beyond the Protocols or beyond the scope or experience of the registered nurse.
- 1.2. The physician may determine whether the patient continues to be appropriate for protocol management.
- 1.3. Registered Nurses will consult/refer to other team members for their expertise related to their scope of practice.

LIMITATIONS:

1. Practice Setting

- 1.1. Registered nurses may be utilized in the provision of care to Kaiser Permanente Health Plan members.

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- 1.2. Care is provided in Kaiser Permanente SCPMG medical offices.
- 1.3. Registered nurses provide direct patient care to these patients as well as telephone advice and ongoing management in accordance with approved protocols.

DOCUMENTATION:

1. Registered nurses are responsible for documentation of patient care, which may include: physician who established diagnosis and plan, subjective data, objective data, assessment of patient status, lab ordered/results, treatment plan including medication orders, patient/family education, physician consultation, referral, and follow-up plan.
2. **Specific Guidelines for Documentation**
 - 2.1. Patients referred for management under protocol must have an established diagnosis, specific to the disease or condition being managed, documented in the chart.
 - 2.2. A patient specific, medication specific authorization which includes medication dosage shall be obtained from the physician responsible for the patient's care prior to medication protocol implementation. (Appendix D: Patient specific, Medication specific Authorization / Order)
 - 2.3. When patients receive telephonic care and advice, the plan of care and advice given to the patient will be documented. A copy of the telephonic chart note will be made available to the primary care physician, mentor, referring physician or designee.
 - 2.4. When patients are seen for protocol care only by the registered nurse, provided care will be documented and signed by the registered nurse. No co-signature will be needed.
 - 2.5. When physician consultation is obtained verbally or when the physician re-examines the patient, the participation of each professional will be documented by the RN and the physician. If there is a treatment outside the protocol, the RN must document the verbal order in the medical record.
 - 2.6. All prescription and non-prescription medication information must be documented in the chart including; name of medication, dosage, and frequency; adjustments of dosage per protocol; the name of the prescribing physician for new and refill medication orders.
 - 2.7. Primary care provider or mentor sign off medication orders.

APPROVAL / AUTHORIZATION:

1. **Development, Approval, Revision and Review**
 - 1.1. Southern California Permanente Medical Group (SCPMG) Standardized Procedures and Protocols template for Registered Nurses working under Standardized Procedure and Protocol caring for Patients with Chronic Conditions was developed by a regional committee consisting of representatives from medicine, nursing, administration, pharmacy and legal.
 - 1.2. Standardized Procedure template was developed by the KPSC Population Care Management Protocol and Training task force, February 2004.
 - 1.3. Template was reviewed by KPSC Ambulatory Clinical Practice Committee, April 2004.

Orange County Interdisciplinary Practice Committee approval: December 8, 2009

Orange County Pharmacy and Therapeutics Committee approval: November 24, 2009

STANDARDIZED PROCEDURE

Section Interdisciplinary Practice Committee	NUMBER	
Title PROTOCOL FOR UNCOMPLICATED HYPERTENSION: REGISTERED NURSE TITRATION OF LISINOPRIL, HYDROCHLOROTHIAZIDE, ATENOLOL AND AMLODIPINE	EFFECTIVE DATE	6/2004
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Appendix A: List of Registered Nurses authorized to use this protocol

PRIMARY CARE

UNCOMPLICATED HYPERTENSION

DEPARTMENT

NAME OF STANDARDIZED PROCEDURE & PROTOCOL

The following are staff authorized to perform this Standardized Procedure and Protocol and have completed annual competency verification within the past twelve (12) months.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

STANDARDIZED PROCEDURE

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APPENDIX B



STATEMENT OF ACCEPTANCE AND PRACTICE APPROVAL

Standardized procedure for Registered Nurses

By signing this statement of approval, I agree to utilize *Standardized Procedures and Protocols* in theory and in practice.

Name: _____ RN _____
(Please print.) (Date)

(Signature)

Medical Center: _____ Location: _____

Department: _____

This RN is approved to provide care in accordance with Standardized Procedures and Protocols as indicated below:

Department Administrator: _____
(Signature)

Approving Physician: _____
(Signature)

I have received a copy of the following Orange County Protocols:
 Uncomplicated Hypertension

STANDARDIZED PROCEDURE

Section Interdisciplinary Practice Committee	NUMBER	
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APPENDIX C:

Authorization form

Patient: *(Name)*
MR#: *(Number)*
Date *(month, day, year)*

I authorize qualified Registered Nurse management using the established protocols for my patient in the Nurse Clinic for uncomplicated hypertension.

My patient will be enrolled in the program for up to twelve months. During this time, the Registered Nurse will follow established protocols to provide the following generalized interventions:

- Assessment of self-care skills and educational needs such as medication adherence, correct use of medications, self-monitoring of symptoms and blood pressure, smoking cessation, and keeping appointments
- Monitoring of the member's symptoms
- Assessment of the member's personal barriers to adherence and evaluation of the member's readiness to make lifestyle changes, using motivational interviewing techniques
- Clinical management, medication adjustment and laboratory monitoring according to established protocols.
- Copies of all intervention notes will be made available to me through progress notes.

When the member achieves blood pressure goal or reaches maximum dosages of medications covered by the protocol, or has been in the program for a maximum of 12 months, they will complete the program. At that time I will be notified and the patient will return to me for routine care.

MD

Date

Attached:

- Physician Orders for Registered Nurse protocol

STANDARDIZED PROCEDURE

Section Interdisciplinary Practice Committee	NUMBER	
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APPENDIX D: Operationally this will be placed in GARP

Patient Specific, Medication Specific Authorization/Order

Medication Allergies: _____

The following medications, doses and ranges are being ordered for the patient identified on this form for medication management associated with uncomplicated hypertension protocol. (Please check all that apply)

Patient Name:

MRN:

Kaiser card stamp

Initial Order

- Hydrochlorothiazide 25 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Hydrochlorothiazide 50 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Initial order: Lisinopril 10 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Initial order: Lisinopril 20 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Lisinopril/Hydrochlorothiazide 20 mg/25 mg tablets, #50. Sig: Take 1/2 tablet daily by mouth for high blood pressure. Refills: 1
- Per protocol: Lisinopril 40 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Per protocol: Lisinopril/Hydrochlorothiazide 20 mg/25 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Per protocol: Lisinopril/Hydrochlorothiazide 20 mg/25 mg tablets, #200. Sig: Take 2 tablets daily by mouth for high blood pressure.
- Per protocol: Atenolol 25 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1.
- Per protocol: Atenolol 50 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure
- Per protocol: Amlodipine 5 mg tablets, #50. Sig: Take ½ tablet daily by mouth for high blood pressure. Refills: 1
- Per protocol Amlodipine 5 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1

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- Per protocol Amlodipine 10 mg tablets, #100. Sig: Take 1 tablet daily by mouth for high blood pressure. Refills: 1
- Per protocol: KCL 10mEq, #200. Sig: Take 2 tablets by mouth daily. Refills: 1

Medications may be advanced per protocol to the following

- All medications are being ordered. If not, cross out unapproved meds:**
 - Lisinopril/Hydrochlorothiazide 20 mg/25 mg ½ - 2 tablet(s) daily
 - Hydrochlorothiazide 25 – 50 mg daily
 - Lisinopril 10 – 40 mg daily
 - Atenolol 25 – 50 mg daily
 - Amlodipine 2.5 – 10 mg daily

Other Instructions:

MD signature _____ Date _____

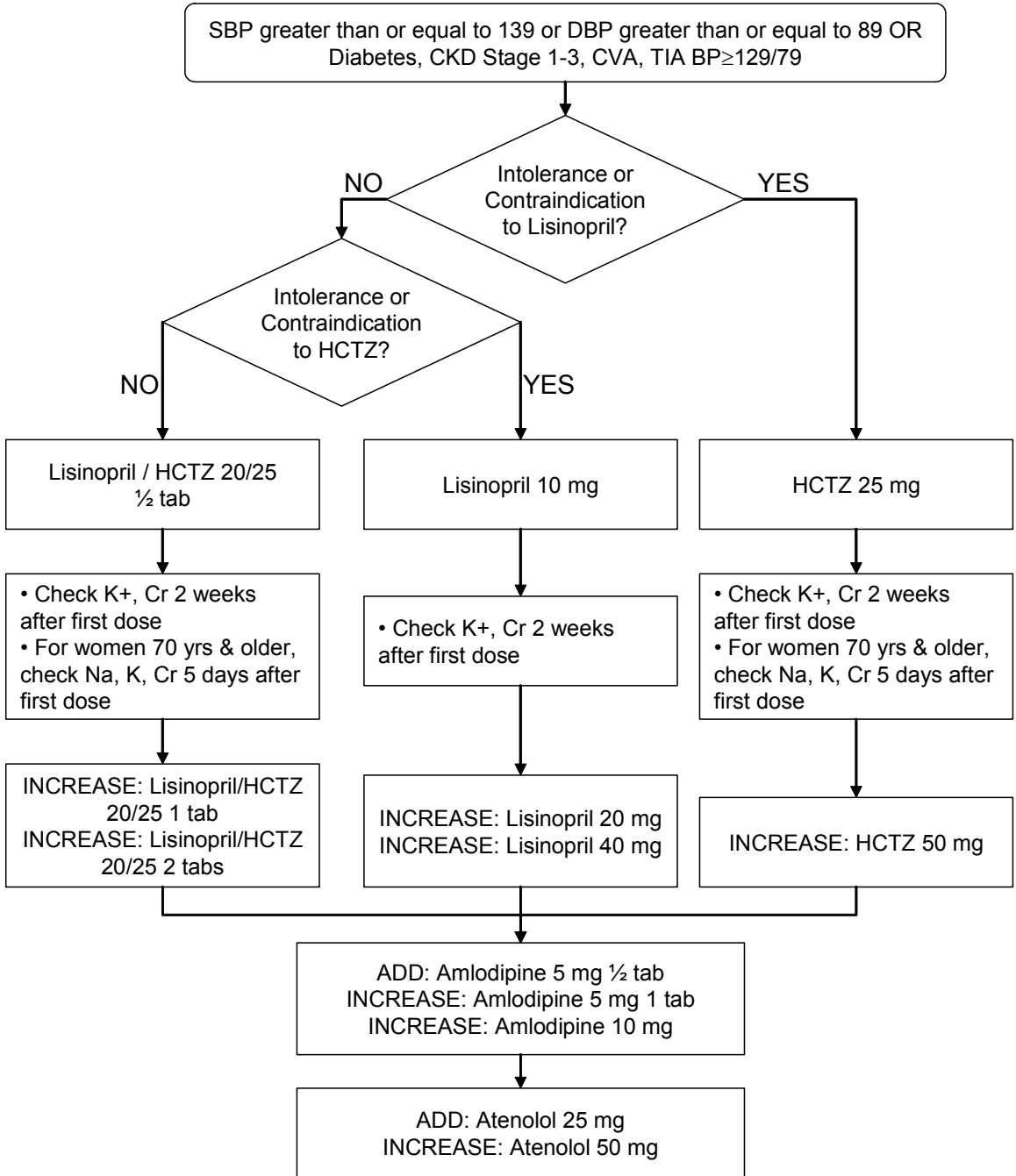
MD printed _____

STANDARDIZED PROCEDURE

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APPENDIX E:

Algorithm for Uncomplicated HTN
(excludes HF, Stage 4 CKD or CAD)



STANDARDIZED PROCEDURE

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Appendix F: Documentation of successful completion of protocol management

PRIMARY CARE

UNCOMPLICATED HYPERTENSION

DEPARTMENT

NAME OF STANDARDIZED PROCEDURE & PROTOCOL

RN Name

Employee Number

The above named RN has successfully completed training in the management of hypertension. The following cases have been reviewed and the RN has demonstrated appropriate assessment, medication adjustment, patient education and follow up per protocol

MRN	Date of intervention
1.	
2.	
3.	
4.	
5.	
6.	

Approved: _____
Primary Care Physician Mentor

Date: _____

STANDARDIZED PROCEDURE

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ANTIHYPERTENSIVE MEDICATIONS- QUICK REFERENCE

DRUG	DOSING	CONTRAINDICATIONS / PRECAUTIONS	ADVERSE EFFECTS	MONITORING PARAMETERS	COMMENTS
LISINOPRIL/ HCTZ HCTZ	Initial Dose: 10 mg / 12.5 mg ½ - 1 tablet daily Max Dose: 20 mg/25 mg 2 tablets daily	HCTZ May not be effective in patients with CrCl <30 ml/min	Dizziness Hypokalemia Hyponatremia	Recheck BP 4 weeks after initiation or dose increase Check Scr & K ⁺ 2 weeks after initiation Check Na ⁺ 5 days after initiation <i>in women ages ≥70 and weight <150 lbs only</i>	Take in the morning due to possible increase urination frequency Supplement with KCL 10meq as needed for K ⁺ ≤ 3.5
		LISINOPRIL Patients with a history of angioedema Pregnancy Women with child-bearing potential Bilateral renal artery stenosis	Cough, dizziness, and hypotension Hyperkalemia K ⁺ ≥ 5.5 Angioedema	Recheck BP in 4 weeks after initiation or dose increase Check Scr & K ⁺ 2 weeks after initiation or dose increase	Persistent dry cough may occur, advise patient to use ice chips or cough lozenges
ATENOLOL	Initial Dose: 25 mg daily Max Dose*: 50 mg daily <small>* For CrCl <60 check with physician mentor regarding switch to metoprolol</small>	2 nd or 3 rd degree heart block HR <55 bpm Asthma/COPD – discuss with mentor physician prior	Bradycardia	Recheck BP approx. 4 weeks after initiation or dose increase Recheck HR at every visit and notify physician if HR <55 bpm Advance if HR ≥ 60 bpm	Discuss discontinuation with mentor physician – risk of CAD exacerbation.
AMLODIPINE	Initial Dose: 2.5 mg daily Max Dose: 10 mg daily		*Peripheral edema, dizziness, headache, flushing	Recheck BP 4 weeks after initiation or dose increase	Notify physician if symptoms of *significant peripheral edema occur (i.e. swelling of hands and feet)