Cardiovascular Disease: Team-Based Care to Improve Blood Pressure Control

Evidence Table for Studies in The Community Guide Update (2003-2012)

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Allen et al. 2008 **Location** Baltimore, MD **Setting and Scale:** 1 Federally Qualified Health Center (FQHC) **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** COACH Program + Baltimore Medical Systems, Inc. + Johns Hopkins University School of Nursing **Funding:** NHLBI + NIH **Applicability:** For this study, mainly to, insured AA women with a high school education who seek care at an inner-city FQHC. **Limitations:** Interpretation of results- Contamination due to physician seeing both intervention and control patients	**Target Population (N=3,899):** Attending one of two FQHCs in Baltimore diagnosed with a CVD condition based on ICD-9 codes. **Inclusion:** ≥21 years old + English speaking + one of the following: LDL-C ≥100 mg/dL or LDL-C ≥130 mg/dL if not diagnosed with CVD or diabetes; BP ≥130 mg/dL or ≥130/80 for persons with diabetes or renal insufficiency; or if diagnosed with diabetes, a HbA1c > 7% or glucose ≥125 mg **Exclusion:** Life-threatening non-cardiac comorbidity with a life expectancy <5 yrs. + psychiatric morbidity + neurologically impaired **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 54.3 yrs. Sex: Female: 71.7%; Male: 28.3% Race/Ethnicity: Black/AA: 79.3%; White: 20.7% Education: <H.S.: 29.1%; H.S. grad: 45.2%; >H.S.: 25.7% Low income: 52.5% (annual <$20,000) Insurance: 83.5% **Reported Co-morbidities:** NR	**Team (NP/CHW intervention group):** **Team Member(s):** Nurse practitioner + CHW **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Team members were co-located, but location of PCP was not stated. NP communicated with PCP about changes to meds; mode of communication not specified. **Practice and Patient Support Components (n=261):** NP and CHW followed patients with CVD conditions for 12 months using a study algorithm to improve outcomes and quality of care. Team members assessed medication compliance + used adherence logs + study algorithm + education on HTN + lifestyle counseling + proactive phone contacts + home visits for nonadherent patients + tracking response to treatment + adherence reminders + self-management tools via pill organizers and medication logs + referring patients to financial assistance programs as needed + tailored feedback **Systems Components:** Telephone follow-up	**Change in SBP (mmHg)** **Baseline: Mean (SD)** Usual care (n=264): 138.7 (19.9) Intervention (n=261): 139.7 (23.8) **12m [ITT]:** Usual Care (n=264): 135.9 (20.5) Intervention (n=261): 130.8 (20.7) **Change in mean difference = -6.20** **Change in DBP (mmHg)** **Baseline: Mean (SD)** Usual care (n=264): 82.3 (13.0) Intervention (n=261): 83.0 (12.7) **12m [ITT]:** Usual Care (n=264): 79.7 (12.6) Intervention (n=261): 77.4 (12.5) **Change in mean difference = -3.00** **Additional Outcomes:** Triglycerides*+ LDL-C* + HDL-C* + HbA1c* + patients' assessment outcome **Summary:** The 12 month NP/CHW intervention showed significantly greater overall improvement in total cholesterol, LDL-C, triglycerides, SBP, DBP, and HbA1c for patients diagnosed with a CVD condition. Additionally, chronic illness care improved in the intervention group compared to the control group.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Training of team members:** Continuing education provided for team members on HTN, hyperlipidemia, and diabetes **Comparison (n=264):** Patients received usual care from their PCP, which was enhanced by feedback regarding CVD risk factors provided to the patient and their provider. Patients also received educational pamphlets + their providers received AHA guidelines.	See previous
Authors: Artinian et al. 2007 **Location** Detroit, MI **Setting and Scale:** Primary care clinics + home visits + telephone for home BP monitor; scale and number of PCPs not reported **Design:** RCT **Quality of Execution:** Fair (4 limitations) **Organization(s):** Author affiliated with Wayne State University **Funding:** National Institute of Nursing Research + NIH **Applicability:** For this study mainly to, obese AA women with uncontrolled hypertension who have access to landline telephone service.	**Target Population (N=469):** African Americans with uncontrolled hypertension **Inclusion:** 18 years of age or older + BP >140/90 or BP > 180/30 mm Hg for persons with diabetes + access to a landline telephone + oriented to person, time, and place + English speaking + intends to remain in Detroit for the next year. **Exclusion:** Arm circumference >17.5 inches + history of dementia, mental illness, terminal cancer, advanced liver disease, or hemodialysis + self-reported illicit drug use or alcohol abuse. **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 59.1 yrs. Sex: Female: 58.8%; Male: 41.2% Race/Ethnicity: Black/AA: 100% Education: <H.S.: 25.8%; H.S. grad: 29.9%; Post H.S.:44.3% Low income:67.6% Insurance: 84.5% BMI (mean): 30.8 (obese) Smoking: 24.7%	**Team (Nurse telemonitoring):** **Team Member(s):** Specially trained registered nurses **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** Team members and providers were not co-located; interaction between team members and PCP not reported. **Practice and Patient Support Components (n=167):** Patients were asked by RNs to measure BP using a home BP monitor 3x a week and submit the data once a week via a device that links the BP monitor to a home telephone. The 12 month intervention delivered by the RN included: an adherence support tool provided via telecounseling + AHA education pamphlet + lifestyle counseling via telephone + RN home visit to set-up BP monitor + telephone reminders by RN + use of	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=193): 155.9 (19.2) Intervention (n=194): 156.8 (19.6) **12m:** Usual Care (n=169): 148.1 (22.3) Intervention (n=167): 145.0 (21.0) **Change in mean difference = -4.0** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=193): 88.4 (13.0) Intervention (n=194): 89.5 (14.0) **12m:** Usual Care (n=169): 83.5 (13.6) Intervention (n= 167): 83.8 (12.1) **Change in mean difference = -0.8** **Proportion Controlled:** **Baseline:** Usual care (n=193): 0% Intervention (n=194): 0% **3m (SBP <135 mm Hg) [observed]:** Usual Care (n=193): 31.0% Intervention (n=194): 36.0% **Absolute pct. pt change: 5.0** **3m [ITT]:** Usual care (n=193): 68.4 Intervention (n=194):84.5 **Absolute pct. pt change = 5.0**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Limitations: Data Analysis: Unclear analyses reporting Interpretation of Results: Baseline groups not comparable; Hawthorne effect due to participants knowing their allocation; Impact of community-based screening on effect size not specified	**Reported Co-morbidities [Intervention Arm]:** Diabetes: 25.8% Depression: 83.5%	a BP monitor + enrollment in Rx assistance program + information on low cost providers **Systems Components:** Relay of clinical data + data collection via home BP monitor + telephone **Training of team members:** NR **Comparison (n=169):** Patients received usual care visits to their PCP that was scheduled at intervals requested by the PCP. Patients without PCPs were provided with a list of free or low-cost healthcare. Patients needing medication assistance were enrolled in a pharmacy assistance program.	**3m (DBP <85 mm Hg)[observed]:** Usual Care (n=193): 53.0% Intervention (n=194): 64.0% **Absolute pct. pt change: 11.0** **3m [ITT]** Usual care (n=193):68.4 Intervention (n=194):84.5 **Absolute pct. pt change = 11.0** **Additional Outcomes:** Medication adherence + number of telecounseling calls + number of BP measurements taken and sent + treatment intensity score correlation with BP + residual analysis results **Summary:** The study found that AA patients with HTN in the intervention group had a significantly greater reduction in SBP than the control group from baseline to 12 months. Similar results were found for DBP; however, the differences were not significant. Additionally, DBP control rates were significantly greater in the intervention group compared to the control group after 3 months; SBP control rates were also greater for the intervention group, but not statistically significant. Furthermore, medication adherence rates increased from baseline to 12 months.
Authors: Becker et al. 2005 **Location** Baltimore, MD **Setting and Scale:** 1 non-clinical community center + 1 YMCA center **Design:** RCT **Quality of Execution:** Good (0 limitations)	**Target Population (N=363):** African American siblings with a family history of premature coronary heart disease. **Inclusion:** Siblings of probands <60 years identified at time of hospitalization for a CHD event + aged 30-59 years + currently smoking + a fasting LDL-C >=3.37 mmol/L (130 mg/dL) and/or an average SBP of >=140 mmHg or DBP of <= 90 mmHg.	**Team (Community-based care intervention):** **Team Member(s):** 1 nurse practitioner + 1 CHW **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Team members and PCP were not co-located; there was minimal interaction between team members	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=167): 137.0 (16.0) Intervention (n=196): 139.0 (16.0) **12m: [ITT]** Usual Care (n=167): 134.0 (17.0) Intervention (n=196): 130.0 (14.0) **Change in mean difference = -6.0** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=167): 86.0 (11.0) Intervention (n=196): 89.0 (10.0)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Organization(s): Author affiliated with Johns Hopkins Medical Institutions **Funding:** NHLBI + Johns Hopkins General Clinical Research Center + National Center for Research Resources + NIH + Pfizer + Novartis + GlaxoSmithKline USA + SmithKline Beecham + Abbott Laboratories **Applicability:** For this study mainly to, middle-aged African American women residing in a large urban city with a family history of coronary heart disease (CHD). **Limitations:** N/A	**Exclusion:** Siblings with a history of CAD + chronic glucocorticosteroid therapy + autoimmune disease + current cancer therapy + immediate life-threatening co-morbidity. **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 47.6 yrs. Sex: Female: 61.0%; Male: 39.0% Race/Ethnicity: Black/AA: 100% Insurance: 80.0% BMI (mean): 31.9 (obese) Smoking: 37.0% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 18.0%	and PCP, with the exception of the NP communicating all changes to medications. **Practice and Patient Support Components (n=196):** Patients received a 12m intervention managed by a NP and CHW to evaluate pharmacotherapy, lifestyle factors, and medication adherence. The intervention consisted of: drug profile completed + assessed medication compliance + use of a treatment algorithm based on national guidelines + patient education on HTN risk + lifestyle counseling + biweekly tracking response to treatment + 2 free YMCA lifestyle activity sessions + free pharmacy charge cards for drugs + national guidelines given to team members + tailored treatment recommendations given to patients **Systems Components:** Relay of clinical data + tech-enabled resource via text messaging + use of a telephone to monitor progress as necessary **Training of team members:** YMCA volunteer and basic life support training for CHW. No reported training for NP **Comparison (n=168):** Patients received usual care from their PCP. Patients' PCP received the same national guidelines as the intervention group. Additionally, the PCPs were given free pharmacy charge cards to provide to their patients. PCPs were also informed of access to free YMCA programs	**12m: [ITT]** Usual Care (n=167): 85.0 (10.0) Intervention (n=196): 84.0 (9.0) **Change in mean difference = -4.0** **Proportion Controlled (BP<140/90 mm Hg):** **Baseline:** Usual care (n=167): 44.0% Intervention (n=196): 37.0% **12m: [ITT]** Usual Care (n=167): 60.0% Intervention (n=196): 71.0% **Absolute pct. pt. change = 18.00 [8.20-27.8]** **Additional Outcomes:** LDL-C*+ TG* + HDL-C*+ Glucose* + Framingham Risk Score (FRS) (total and hard)+ smoking cessation **Summary:** A community-based care intervention managed by a NP and CHW was found to significantly improve BP levels and LDL-C in AA probands with a family history of CHD. Slight shifts in the favorable direction for the intervention group were also found for FRS (total), FRS (hard), smoking cessation, and glucose, thus indicating a significant reduction in global CHD risk. There were no difference between groups observed for HDL-C and TG.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Bogner et al. 2008 **Location** Philadelphia, PA **Setting and Scale:** 1 community-based primary care practice + 12 physicians with >30,000 patients visits per year **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Author affiliated with the University of Pennsylvania **Funding:** AHA Grant-in-Aid + NIMH + Robert Wood Johnson Foundation **Applicability:** For this study, mainly to, middle-aged AA women with uncontrolled HTN and depression receiving care from a community-based primary care practice. **Limitations:** Interpretation of results- Groups not comparable at baseline	**Target Population (N=109):** Adults suffering from hypertension and depression with upcoming appointments to the clinic. **Inclusion:** 50 yrs. and older + SBP ≥ 140/90 mm Hg; or SBP ≥ 130/80 mmHg for persons with diabetes + 2 office visits in the previous 12 months. **Exclusion:** cognitively impaired + unable to communicate in English + residing in a care facility that provides medications on a schedule + unable to use the Medication Event Monitoring (MEMs) caps **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 59.7 yrs. Sex: Female: 75.0%; Male: 25.0% Race/Ethnicity: Black/AA: 78.1% Education: <H.S.: 18.8% **Reported Co-morbidities [Intervention Arm]:** Depression: 100%	**Team (Integrated care management):** **Team Member(s):** Masters-level research coordinator + Integrated care manager **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** Information on co-location not provided; however, care managers acted as a liaison between patients and physicians in aiding to identify depression symptoms. **Practice and Patient Support Components (n=32):** Patients received three 30-minute in person sessions and two 15-minute telephone monitoring contacts during a 4 week period delivered by an integrated care manager who was trained by a master's level research coordinator. The intervention included the following: patient education on BP and antidepressant meds + med compliance assessed + patient education on HTN + two 15-min. phone contacts + weekly supervisions of care managers + individualized program congruent with patient's social and cultural context. **Systems Components:** EMRs/EHRs (pre-existing) + data collection via MEMS caps + counseling sessions via telephone	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=32): 143.1 (22.5) Intervention (n=32): 146.7 (20.9) **6 weeks:** Usual Care (n=32): 141.3 (18.8) Intervention (n=32): 127.3 (17.7) **Change in mean difference = -17.6** **Change in DBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=32): 81.4 (11.1) Intervention (n=32): 83.0 (10.7) **6 weeks:** Usual Care (n=32): 85.0 (11.9) Intervention (n=32): 75.8 (10.7) **Change in mean difference = -10.8** **Additional Outcomes:** Medication adherence + depression symptoms **Summary:** Higher rates of adherence to antihypertensive and antidepressant medications, greater blood pressure control, and fewer depressive symptoms at 6 weeks were found to be greater for hypertension and depression patients in the integrated care management group compared to the control group.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Training of team members:** Weekly in-person training was given to the care managers on depression and HTN management. **Comparison (n=32):** Usual care patients attended the clinic at 2, 4, and 6 weeks where depression symptoms, blood pressure, and medication adherence was assessed in person and were for data collection purposes only + patients received MEMS caps for monitoring adherence	See Previous
Authors: Bosworth et al. 2009 **Location** Durham, NC **Setting and Scale:** 3 Primary Care Clinics of the Durham VA Medical Center with 32 primary care providers (23 general internists, 7 PAs and 2 registered nurses) **Design:** RCT (cluster) **Quality of Execution:** Good (0 limitations) **Organization(s):** VA Medical Center **Funding:** VA+NHLBI **Applicability:** From this study, mainly to male VA patients with hypertension, with a higher proportion of African American patients (compared to the general population) and those from low	**Target Population (n=816):** VA patients diagnosed with hypertension **Inclusion:** Patients followed by any of 32 primary care providers at the included clinics + diagnosis of hypertension identified by outpatient diagnostic code + prescription filled for hypertension medication within the past year **Exclusion:** Chronic kidney disease + stroke + MI + coronary artery vascularization + metastatic cancer + dementia + nursing home resident + receiving home health care + severely hearing or speech impaired **Reported Baseline Demographics:** **Intervention Arm 1:** Age (mean): 62.0 yrs. Sex: Female: 3.0%; Male: 99.0% Race/Ethnicity: African-American: 38.0%; White: 57.0% Education: HS grad or less: 50.0% Low income: 22.0% Smoking: 30.0%	**Intervention Team (Tailored patient behavioral nurse intervention):** **Team Member(s):** RN with prior research experience**[both intervention arms]** **PC Provider:** Physician, PA, NP **Team Member Role for meds:** Only adherence support and information for current HT meds provided **[both arms]** **Team Interaction:** Nurses could contact PCPs for emergencies as well as a board certified internist as necessary. Location of the nurse in relation to the PCP is not reported **[both arms]** **Practice and Patient Support Components** **Intervention Arm 1 (patient behavioral int.) (n= 144):** Nurses telephoned patients every two months and provided scripted information from 9 educational and behavioral modules. The	**Change in SBP (mm Hg)** **Arm 1** **Baseline: Mean (SD)** Usual care (n=143): 141.6 (1.4) Intervention (n=144): 138.8 (1.4) **24m [ITT]:** Usual care (n=143): 136.8 (1.6) Intervention 1 (n=144): 136.3 (1.6) **Change in mean difference = +2.3** **Arm 2** **Baseline: Mean (SD)** Usual care (n=143): 141.6 (1.4) Intervention (n=150): 139.2 (1.4) **24m [ITT]:** Usual care (n=143): 136.8 (1.6) Intervention (n=150): 136.8 (1.7) **Change in mean difference = +2.4** **Proportion Controlled (BP<140/90 mm Hg OR 130/85 mm Hg for diabetics)** **Combined Intervention Arms (1 and 2)** **Baseline:** Usual care (n=143): 32.0% Intervention 1 (n=294): 40.1% **24m [ITT]:** Usual care (n=143): 43.9% Intervention 1 (n=294): 53.7% **Absolute pct pt change = 1.7 [-8.20, 11.6]**

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Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
SES – although results by these demographic characteristics were not provided. **Limitations:** N/A	**Intervention Arm 2:** Age (mean): 65.0 yrs. Sex: Female: 1.0%; Male: 97.0% Race/Ethnicity: African-American: 43.0%; White: 55.0% Education: HS grad or less: 51.0% Low income: 23.0% Smoking: 26.0% **Reported co-morbidities:** Diabetes: 31.0% (Arm1);38.0% (Arm2)	intervention included: education on BP meds + reporting life-threatening side effects + assessed med compliance via pill refill info + adherence tool via strategies such as pairing meds and using a calendar + use of a treatment algorithm + hypertension education + lifestyle counseling + provided information on support groups and local resources + provider reminders on patient's most recent BP and medications **Intervention Arm 2 (patient behavioral int. + DSS) (n=150):** In addition to the services described in arm 1, PCPs received recs via a decision support system (DSS). The DSS intervention included: Drug profile completed + treatment algorithm for nurses (via database application) and for PCPs (via DSS) + tracking response to treatment via DSS + provider feedback given quarterly **Systems Components [both intervention arms]:** existing EMR system (pre-existing) + enhanced data collection system via electronic database+ telephone + clinical information systems via DSS **(arm 2 only)** **Training of team members [both arms]:** NR **Comparison (n= 117):** Patients received hypertension reminders consisting of patient's most recent BP + patient's current medication regimen + an option to update the BP value.	**Additional Outcomes:** HbA1c* + LDL-C* health care use + perceived HTN risks + confidence with HTN regimen + medication adherence **Summary:** Behavioral nurse intervention might make difference on BP control rates irrespective of other interventions like DSS. DSS intervention for providers at point-of-care did not result in significant improvements in BP control for male VA patients with hypertension. There was some evidence that a telephone administered nurse self-management intervention in combination with a provider support DSS system targeting blood pressure control may have modest "spill-over" effect on diabetes control at 2 years; however, the intervention had no significant effect on LDL cholesterol.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Bosworth et al. 2009a **Location** North Carolina **Setting and Scale:** 2 University primary care clinics. Patients were cared for by 7 faculty general internists in one clinic and 85 residents under the supervision of faculty at the other **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Duke University Health System **Funding:** NHLBI + Pfizer Foundation + AHA **Applicability:** From this study, mainly to older adult obese population, predominantly White and African American attending primary care clinics at an academic medical center. **Limitations:** Interpretation of Results: Follow-up < 80%; groups not comparable at baseline	**Target Population (N= 1514):** Patients diagnosed with hypertension **Inclusion:** Diagnosed with hypertension at least 12 months prior + attending included primary care clinics for at least 12 months prior to data extraction + currently taking anti-hypertensive medication + scheduled non-lab primary care provider appointment during the next 30 days + resident in one of 32 specified zip codes in the areas surrounding Duke University Health System. **Exclusion:** Dementia + Parkinson's disease + atrial fibrillation + end stage renal disease + patient of a study investigator or physician not expected to remain at the practice during the entire study period + resident in nursing home or receiving home health care + hospitalization for stroke or heart attack, surgery for blocked arteries, or diagnosis of metastatic cancer in the prior 3 months + poor vision + difficulty hearing + difficulty understanding English + participant in another BP study + spouse participating in current study + arm circumference >17 inches and wrist circumference >8.5 inches + pregnant or planning to become pregnant + does not receive medical care from Duke clinics + receiving dialysis+ receiving organ transplant + pulmonary hypertension **Reported Baseline Demographics:** **Intervention Arm 1:** Age (mean): 60.0 yrs. Sex: Female: 67.0%; Male: 33.0% Race/Ethnicity: African-American:	**Intervention Team (Tailored patient behavioral nurse intervention):** **Team Member(s):** Nurse with clinical training in acute medical care, geriatrics, and disease management and prior experience in conducting other clinical trials **[both arms].** **PC Provider:** Physician (internists, residents, faculty) **[both arms]** **Team Member Role for meds:** Only adherence support and information for current HT meds provided **[both arms]** **Team Interaction:** NR **Practice and Patient Support Components** **Intervention Arm 1 (patient behavior int.) (n= 159):** Patients in the behavioral intervention received a telephone management intervention delivered by nurses and included: education on BP meds and side effects + assessment of medication compliance + adherence plan using mnemonics, involving spouse/family member and use of pillboxes + decision support tool for nurses + patient education on hypertension risk factors + lifestyle counseling + bimonthly follow-up calls by study nurse + encouragement to measure own BP + information on support groups and local community resources + support to improve communication with PCP including role play	**Change in SBP (mm Hg)** **Arm 1** **Baseline: Mean** Usual care (n=159): 124.0 (18.0) Intervention (n=159): 124.0 (18.0) **24m [ITT]:** Usual care (n=159): NR Intervention (n=159): NR **Change in mean difference [95%CI] = +0.6 [-2.2, 3.4]** **Arm 2:** **Baseline: Mean** Usual care (n=159): 124.0 (18.0) Intervention (n=159): 126.0 (20.0) **24m [ITT]:** Usual care (n=159): NR Intervention (n=159): NR **Change in mean difference [95%CI] = -3.9 [-6.9, -0.9]** **Change in DBP (mm Hg)** **Arm 1** **Baseline:** Usual care (n=159): 70.0 (10.0) Intervention (n=159): 71.0 (10.0) **24m [ITT]:** Usual care (n=159): NR Intervention (n=159): NR **Change in mean difference [95%CI] =+0.4 [-1.1, 1.9]** **Arm 2** **Baseline:** Usual care (n=159): 70.0 (10.0) Intervention (n=159): 72.0 (12.0) **24m [ITT]:** Usual care (n=159): NR Intervention (n=159): NR **Change in mean difference [95%CI] = -2.2 [3.8, -0.6]**

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Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	52.0%; White: 43.0%; Other: 5.0% Education: ≤High school diploma: 34.0% Low income: 18.0% BMI (mean): 32.2 (obese) History of hypertension: 62.0% Smoking: 18.0% **Intervention Arm 2:** Age (mean): 61.0 Sex: Female: 62.0%; Male: 38.0% Race/Ethnicity: African-American: 43%; White: 56%; Other: 1% Education: ≤High school diploma: 36% Low income: 18% BMI (mean): 32.1(obese) History of hypertension: 63% Smoking: 16% **Reported co-morbidities:** Diabetes: 36.0% (arm 1); 32.0% (arm2)	**Intervention Arm 2 (patient behavior int. + home BP monitors) (n=159):** In addition to the services provided to intervention arm 1, patients in this intervention received an electronic BP monitor including training on its use and asked to measure their BP 3x/week **Systems Components (both arms):** Tech-enabled database software used to record information and enable tailoring of messages to patients + telephone **Training of team members (both intervention arms):** NR **Comparison (n=159):** Participants received usual care plus received healthy lifestyle classes. Clinical practice guidelines for managing hypertension were sent with each letter to the provider	**Proportion Controlled (BP<140/90 mm Hg OR 130/80 mm Hg for persons with diabetes)** **Combined Intervention Arms (1 and 2)** **Baseline:** Usual care (n=159): 72.0% Intervention (n=319): 71.0% **24m [ITT]:** Usual care (n=159): NR Intervention (n=318) NR **Absolute pct. pt change= +7.65** **Additional Outcomes:** Adherence to intervention + utilization of medical resources + medication adherence + exercise **Summary:** A brief behavioral intervention delivered via telephone by nurses demonstrated a significant improvement in BP control in a mainly older, obese population attending primary care clinics at an academic medical center in both intervention arms. Systolic and diastolic BP improved at 12 months but these results were not sustained at 24 months for the patient behavioral intervention while results remained significant for the combined (patient behavioral + home BP monitors] intervention. Self-reported medication adherence and exercise improved slightly in the intervention arms but was not significant.
Authors: Bosworth et al. 2011 **Location** Durham, NC **Setting and Scale:** 3 VA medical clinics including 28 internal medicine faculty physicians and 10 midlevel	**Target Population (N=1,551):** Patients attending general medicine clinics at the Durham VAMC. **Inclusion:** Diagnosis of hypertension + using an anti-hypertensive drug + >140/90 mmHg	**Team (Nurse Telemedicine):** **Team Member(s):** Registered nurse + study MD **[both intervention arms]** **PC Provider:** Physician **Type of TBC intervention:** Only adherence support and information for current HTN meds provided **[arm 1]**; Changes to	**Change in SBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=147): 128.0 (17.0) Intervention (n=148):129.0 (19.0) **18m [ITT]:** Usual Care (n=147): NR Intervention (n=148): NR **Change in mean difference = +2.20**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
providers **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Veteran's Affairs **Funding:** Veteran's Affairs + American Heart Association **Applicability:** For this study, mainly to, older male veterans with a history of HTN who visited the Durham VAMC. **Limitations:** Interpretation of results- Issues with effect size and power calculation based on how patients were recruited	**Exclusion:** Patients on hemodialysis + serum creatinine > 2.5 mg/dL + no documentation of renal functioning + organ transplant + hospitalized for stroke/MI/coronary artery revascularization in the last 3 months + metastatic cancer + dementia + no home telephone + nursing home residents + received home health care + severely impaired hearing or speech **Reported Baseline Demographics** **Intervention Arm 1** Age (mean): 63.0 yrs. Sex: Female: 8.0%; Males: 92.0% Race/Ethnicity: Black/AA: 45.0%; White: 53.0%; Other: 3.0% Education: <H.S.: 14.0% BMI (mean): 30.6 (obese) Smoking: 19.0% **Intervention Arm 2** Age (mean): 64.0 yrs. Sex: Female: 7.0%; Male: 93.0% Race/Ethnicity: Black/AA: 48.0%; White: 49.0% ; Other: 3.0% Education: <H.S.: 12.0% BMI (mean): 30.2 (obese) Smoking: 20.0% **Intervention Arm 3** Age (mean): 63.0 yrs. Sex: Female: 14.0%; Male: 86.0% Race/Ethnicity: Black/AA: 52.0%; White: 44.0%; Other: 4.0% Education: <H.S.: 18.0% BMI (mean): 30.6 (obese) Smoking: 22.0% **Reported Co-morbidities** Diabetes: 44.0% (arm 1); 43.0% (arm 2); 40.0% (arm 3)	meds can be made independent of PCP **[arms 2 and 3]** **Team Interaction:** Team members and PCP were not co-located; team communication and interaction not specified **[arm 1]**. Team members and PCP co-location not reported; however, changes to meds were discussed between the nurse, study physician, and the patients' PCP **[arms 2 and 3]**. **Practice and Patient Support Components** **Intervention Arm 1[Nurse-Behavioral Telephone] (n=148):** Patients in this group received a behavioral management intervention consisting of 11 tailored health behavior model focused on improving HTN self-management via telephone. Patients were given education on HTN and BP meds + an adherence tool + lifestyle counseling + reminder phone calls **Intervention Arm 2 [Nurse-MD Med Management] (n=149):** Patients in this group received treatment based on evidence-based computer software which notified nurses to recommend changes in medication. Additionally, patients received a completed drug profile + assessed medication compliance + frequent phone contacts from nurses + compensation for each visit **Intervention Arm 3 [Combination Group](n=147):** Patients in this group received a	**Baseline Arm 2: Mean (SD)** Usual care (n=147): 128.0 (17.0) Intervention (n=149): 132.0 (21.0) **18m [ITT]:** Usual Care (n=147): NR Intervention (n=149): NR **Change in mean difference =-1.20** **Baseline Arm 3: Mean (SD)** Usual care (n=147): 128.0 (17.0) Intervention (n=147):127.0 (21.0) **18m [ITT]:** Usual Care (n=147): NR Intervention (n=147): NR **Change in mean difference = -3.60** **Change in DBP (mm Hg)** **Baseline Arm1: Mean (SD)** Usual care (n=147): 78.0 (14.0) Intervention (n=148): 77.0 (12.0) **18m [ITT]:** Usual Care (n=147): NR Intervention (n=148): NR **Change in mean difference = +0.60** **Baseline Arm 2: Mean (SD)** Usual care (n=147): 78.0 (14.0) Intervention (n=149): 78.0 (14.0) **18m [ITT]:** Usual Care (n=147): NR Intervention (n=149): NR **Change in mean difference = -0.50** **Baseline Arm 3: Mean [SD]** Usual care (n=147): 78.0 (14.0) Intervention (n=147): 77.0 (13.0) **18m [ITT]** Usual Care (n=147): NR Intervention (n=147): NR **Change in mean difference = -1.40**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	combination of the behavioral and medication management intervention. **Systems Components [all arms]** EMRs/EHRs + Relay of clinical data + software for database + BP monitor/telemedicine device + telephone + clinical information systems **[arms 2 and 3 only]** **Training of team members:** NR **Comparison (n=147):** Patients received usual care and did not have contact with the intervention nurses or tele-monitoring equipment.	**Proportion Controlled (BP<140/90 mm Hg):** **Combined Intervention Arms (1, 2 and 3)** **Baseline:** Usual care (n=147): 61.0% Intervention (n=444): 59.0% **18m [ITT]:** Usual Care (n=147): NR Intervention (n=144): NR **Absolute pct pt change =-0.30 [-2.50-3.10]** **Additional Outcomes:** Int. activation + time spent w/ nurses **Summary:** For hypertensive male veterans who visited the Durham VAMC, the behavioral and med. MTM interventions alone showed significant improvements for BP control at 12m, but not at 18m; only the combined int. group improved after 18m compared to the UC group.
Authors: Brennan et al. 2010 **Location:** NR **Setting and Scale:** Intervention occurred via telephone and mail. Patients used BP monitors at home. **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Aetna **Funding:** Aetna + Sanofi-Aventis	**Target Population (N=6698):** African American patients identified through Aetna's eligibility and claims system with medical benefits in a fully insured HMO plan **Inclusion:** 19 years or older + hypertension diagnosis during previous 18 mo. + had selected a PCP **Exclusion:** Previously recruited for a different Aetna disease management program **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 55.3 yrs. Sex: Female: 64.0% Male: 36.0%	**Team (nurse-led, telephone-based disease management):** **Team Member(s):** Nurse **PC Provider:** Physician **Team Member Role for meds:** Only support and information for hypertension provided **Team Interaction:** Nurse and PCP were not co-located and interaction occurred via quarterly reports containing patient's BP progress. Interaction between nurse and patients occurred via telephone. **Practice and Patient Support Components (n=320):** All patients in this study received an	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=318): 132.9 (20.5) Intervention (n=320): 133.2 (17.9) **12m [ITT]:** Usual Care (n=318): 126.7 Intervention (n=320): 123.6 **Change in mean difference = -3.40** **Change in DBP (mmHg):** **Baseline: Mean (SD)** Usual care (n=318): 83.6 (12.9) Intervention (n=320): 84.6 (10.9) **12m [ITT]:** Usual Care (n=318): 76.9 Intervention (n=320): 76.9 **Change in mean difference = -1.00**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: From this study, mainly to African American female patients with hypertension who are enrolled in a fully insured HMO plan and are willing to interact with a disease management nurse and use home BP monitors. **Limitations:** Sampling: self-selection bias might have been an issue Interpretation of results: follow-up ≤80% in both groups	Race/Ethnicity: Black/AA: 100% Education: H.S. grad or higher: 96.0% Income: <$50,000: 41.0%; ≥$50,000: 24.0% Insurance: Private: 100% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 27.0% Currently on HTN meds: 97.0% Hyperlipidemia: 48.0% Kidney disease: 3.0%	electronic BP monitor and training on its use. Intervention patients received nurse-led disease management counseling sessions including: patient education on hypertension + lifestyle counseling + monthly telephone follow-up + financial incentives for participation + guidelines on JNC-VI and hypertension management in African Americans provided to patient's PCP + information on free online training for cultural competency. **Systems Components:** Electronic home BP monitor + telephone follow-up **Training of team members:** Nurses received a 2.5 hr. interactive, case-based online course in cardiac care and cultural competency **Comparison (n=318):** In addition to the electronic BP monitor patients received the following: Financial incentives for participating in the study.	**Proportion Controlled (BP<120/80 mm Hg):** **Baseline:** Usual care (n=318): 17.0% Intervention (n=320): 12.0% **12m [ITT]:** Usual Care (n=318): 22.0% Intervention (n=320): 26.0% **Absolute pct. pt. change = +9.0** **OR [95%CI]: 1.50 [0.997-2.27]** **Additional Outcomes:** Frequency of BP monitoring + antihypertensive medication use + healthcare utilization **Summary:** Home BP monitoring coupled with a disease management program delivered by nurses trained in cultural competency improved SBP significantly but the improvement in DBP or proportion controlled was not significant. The intervention also increased the frequency of BP self-monitoring more than just a home BP monitoring device alone in African American patients with hypertension fully insured in an HMO plan.
Authors: Bunting et al. 2008 **Location:** Asheville, North Carolina **Setting and Scale:** 12 community pharmacy and hospital clinics. Patients were recruited from two larger employers (City of Asheville and Mission Hospitals) with approx. 12,000 covered lives in their self-insured health plans	**Target Population (N=906):** Patients with HTN and/or dyslipidemia who were employees, spouses, or covered dependents of two large employers **Inclusion:** Participating in employers' health plans + diagnosis of hypertension and/or dyslipidemia **Exclusion:** NR	**Team (pharmacist-driven MTM program):** **Team Member(s):** community and hospital pharmacists + professional educators (not specified) **PC Provider:** physicians **Team Member Role for meds:** Changes to medications can be made with PCP approval/consultation **Team Interaction:** Pharmacists made recommendations to the participant's PCP via fax when	**Change in MI events: Number of events** **Baseline (3 years prior to intervention):** Historical period (comparison) (n=1189 patient-yrs.): NR Study period (intervention) (n=1286 patient-yrs.): NR **Follow-up (Years1-6):** Historical period (comparison) (n=1189 patient-yrs.): 23 Study period (intervention0 (n=1286 patient-yrs.): 6 **% Change = -86.0** **OR [95%CI]: 0.24 [0.10,0.59]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Design: Interrupted time series (CVD events) **Quality of Execution:** Good (1 limitations) **Organization(s):** City of Asheville + Mission Hospitals **Funding:** Employers' health plans + Novartis + APHA Foundation **Applicability:** From this study, mainly to educated middle-aged (50.4yrs.), white persons with hypertension, dyslipidemia, or both with health insurance covered through their employer **Limitations:** Interpretation of Results: Waiving of copays might by itself increase medication which might confound interpreting the results from the overall intervention	**Reported Baseline Demographics [Intervention Arm]:** Age (mean): 50.4 yrs. Sex: Female: 53.6%; Male: 46.4% Race/Ethnicity: AA: 13.3%; White: 83.7%; Asian: 0.9%; Hispanic: 0.9%; Other: 1.2% Education: < H.S.: 7.6%; H.S. grad:22.5%; post H.S.: 69.9% Insurance status: private: 100% Smoking: 13.9% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 25.3% Heart Failure: 3.0% Asthma: 11.9% COPD: 1.2% MI: 4.8% Stroke: 0.7% Angina: 8.1% Peripheral arterial disease: 2.0% CABG/PTCA: 4.4% Kidney Disease: 2.1%	potential improvements in therapy were identified. PCPs were also asked to share treatment goals for each patient with the pharmacist care manager **Practice and Patient Support Components (n=565):** This 6-yr. pharmacist-driven management program included self-care education provided by professional educators and face-to-face patient consultation by pharmacist case managers and included: education classes for CVD risk reduction + counseling sessions with pharmacists lasting approx. 30 min. every 3 months + treatment goals developed based on ATP III, NCEP, JNC-VII, and AHA guidelines + BP checked during each visit + lipid panels measured annually + ROPC via significantly reduced copayments **Systems Components:** NR **Training of team members:** Pharmacists received cardiovascular certificate training to assure that they were up-to-date in national HTN and dyslipidemia guidelines **Comparison:** N/A	**Change in non-MI ACS events: Number of events** **Baseline (3 years prior to intervention):** Historical period (comparison) (n=1189 patient-yrs.): NR Study period (intervention) (n=1286 patient-yrs.): NR **Follow-up (Years1-6):** Historical period (comparison) (n=1189 patient-yrs.): 58 Study period (intervention0 (n=1286 patient-yrs.): 37 **% Change = -40.0** **OR [95%CI]: 0.60 [0.40, 0.91]** **Additional Outcomes:** N/A **Summary:** A community-based CVD disease management program that provided CVD risk reduction education and face-to-face counseling by community and hospital pharmacists resulted in a reduced number of MI and non-MI-ACS events in predominantly middle-aged white persons with hypertension and/or dyslipidemia with health insurance covered through their employer. Patients were also significantly less likely to have a CVD-related ED visit, hospitalization, or CVD-related medical expenses
Authors: Carter et al. 2009 **Location** Iowa **Setting and Scale:** 6 community-based primary care clinics with 1 clinical pharmacist per location and a	**Target Population (N=1242):** Patients at participating clinics diagnosed with uncontrolled hypertension **Inclusion:** ≥21 years old + taking 0-3 antihypertensive meds (if no diabetes) + SBP 140-179 mm Hg or DBP 90-109	**Team (pharmacist and physician intervention):** **Team Member(s):** clinical pharmacists **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=210): 150.6 (14.1) Intervention (n=192):153.6 (12.8) **6m [ITT]:** Usual Care (n=210): 143.8 (20.5) Intervention (n=192): 132.9 (15.5) **Change in mean difference = -12.0**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
median of 5.5 faculty physicians **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Family Medicine Residency Program Clinics + University of Iowa **Funding:** NHLBI + AHRQ + VA **Applicability:** For this study, mainly to, community-based family medicine offices treating predominantly obese, white populations with significant comorbidities. **Limitations:** Interpretation of results- Groups not comparable at baseline	mm Hg; or SBP 130-179 mm Hg or DBP 80-109 mm Hg if diagnosed with diabetes **Exclusion:** BP medication or dose change within four weeks of the baseline visit + BP values ≥ 180/110 mm Hg + evidence of hypertensive urgency or emergency, myocardial infarction or stroke (6 months prior to screening) + New York Heart Association Class III or IV heart failure + unstable angina + serious renal or hepatic disease + pregnancy + poor prognosis (life expectancy less than 3 years) + dementia or cognitive impairment. **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 57.3 yrs. Sex: Females: 62.5%; males: 37.5% Race/Ethnicity: Black/AA: 6.8%; White: 85.9%; Hispanic: 4.2%, American Indian: 0.5%; Other: 2.6%. Education: > H.S.: 33.9% Low income: 21.4% Insurance: Insured: 56.3%; Medicare/Medicaid: 37.0% BMI (mean): 32.1 (obese) Smoking: 33.9% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 19.8%	**Team Interaction:** Pharmacists and physicians were co-located; pharmacist provided face-to-face recommendations to PCP. **Practice and Patient Support Components (n=192):** Hypertensive patients in this 6 month intervention were seen by a clinical pharmacist who made drug therapy recommendations to physicians based on national guidelines. The pharmacist completed a patient drug profile + provided HTN education + provided proactive follow-up + tracked response to treatment + provided telephone reminders **Systems Components:** Tech-enabled resource via 24-hr BP monitor + telephone calls **Training of team members:** Two initial 90-minute training sessions were provided to the intervention pharmacists by one investigator to ensure that a consistent intervention was provided + Intervention physicians and pharmacists underwent teambuilding exercises conducted by two investigators **Comparison (n=210):** The control group did not receive usual care. Instead, they were informed of their BP, the goal BP they needed to achieve and they were given written information on managing BP. In addition, all physicians received educational sessions on strategies to improve BP control.	**Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=210): 83.6 (12.3) Intervention (n=192): 87.4 (11.9) **6m [ITT]:** Usual Care (n=210): 79.1 (12.3) Intervention (n=192): 77.7 (11.2) **Change in mean difference = -1.80** **Proportion Controlled (BP< 140/90 mm Hg or < 130/80 for diabetics):** **Baseline:** Usual care (n=210): 0% Intervention (n=192): 0% **6m [ITT]** Usual Care (n=210): 29.9% Intervention (n=192): 63.9% **Absolute pct pt change = +34.0** **Additional Outcomes:** Changes to BP meds + difference with passive intervention group + guideline adherence score + medication adherence score + symptoms **Summary:** Patients with uncontrolled hypertension and significant comorbidities saw a mean decrease in SBP and DBP for the control and intervention groups after 6 months. Similar effects were found for 24-hour BP levels, and BP control was greatest in the intervention group. Guideline adherence scores also increased in both the intervention and control groups.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Carter et al. 2008 **Location** Iowa **Setting and Scale:** Five university clinics **Design:** RCT (clustered) **Quality of Execution:** Good (1 limitation) **Organization(s):** University of Iowa **Funding:** NHLBI + VA **Applicability:** From this study, mainly to white patients with a small number of comorbidities who receive care at clinics staffed by faculty physicians **Limitations:** Interpretation of Results: Possible Hawthorne effect in study group because study providers were not blinded to intervention groups and were also aware of increased surveillance of performance for HTN control	**Target Population (n=446):** Adult patients with hypertension **Inclusion:** 21-85 yrs. old + clinic BP of 145-179mm SBP and 95-109 DBP (without diabetes) or clinic BP of 135-179mm SBP and 85-109 DBP (with diabetes). **Exclusion:** BP meds or dose change within 4 weeks of baseline + enrollment in a 24hr BP monitoring service in the last 6m + stage 3 hypertension + evidence of hypertensive urgency or emergency + recent MI or stroke (last 6m) + NYHA Class III or IV CHF + unstable angina + serious renal/hepatic disease + pregnancy + poor prognosis + dementia + cognitive impairment **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 59.6 yrs. Sex: Female: 58.4%; Male: 41.6% Race/Ethnicity: White: 88.1%; Other (non-Caucasian): 16.0% Education: Post high school: 63.4% Low income (<$25000 per household): 18.8% BMI (mean): 32.3% (obese) **Reported co-morbidities [Intervention Arm]:** Diabetes: 24.8% # of co-existing conditions (mean): 0.47	**Team (Physician-Pharmacist Collaboration):** **Team Member(s):** Pharmacist (PharmD + advanced pharmacy degree) **PC Provider:** Physician (MD) **Team Member Role for meds:** Changes to meds can be made w/PCP approval/consultation **Team Interaction:** Most recommendations to the physician were performed face-to-face during the patient visit but some physicians provided the authority for pharmacists to make dosage changes and then inform them immediately after the visit. **Practice and Patient Support Components (n= 101):** The intervention was mainly delivered by pharmacists (some of whom were already employed at the included clinics) and consisted of: patient education on BP meds via NHLBI guidelines + drug profile completed + assessed medication compliance + adherence plan/tool developed + adherence message and BP goal provided by research nurses + hypertension education + regular visits scheduled for patients + follow-up visits via telephone as needed + tracking response to treatment + training on home BP monitoring and BP goals + physicians received education on HT guidelines via lectures and handouts + education from pharmacists + lifestyle counseling via study nurses	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=78): 150.3 (9.0) Intervention (n=101): 153.1 (10.0) **9m:** Usual care (n=78): 133.0 (14.2) Intervention (n=101): 124.2 (9.7) **Change in mean difference [95%CI] = -8.7 [-12.9, -4.4]** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=78): 85.4 (11.0) Intervention (n=101): 84.9 (12.0) **9m [ITT]:** Usual care (n=78): 78.5 (10.9) Intervention (n=101): 74.7 (9.6) **Change in mean difference [95%CI] = -5.4 [-8.0, -2.8]** **Proportion Controlled [BP<130/80 mm Hg]** **Baseline:** Usual care (n=78): 0% Intervention (n=101):0% **9m[ITT]:** Usual care (n=78): 46.2% Intervention (n=101):81.2% **Absolute pct pt change [95%CI] = +35.0 [21.6 ,48.4]** **OR [95%CI]: 8.9 [3.8, 20.7]** **Additional Outcomes:** 24hr BP **Summary:** The effect of physician-pharmacist collaboration significantly improved SBP, DBP, 24 hour BP, and proportion of BP controlled in the intervention group at 9 months in mainly white patients with a small number of comorbidities who receive care at clinics staffed by faculty physicians.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Systems Components:** telephone follow-up **Training of team members:** In-person training/orientation consisting of 2 initial 90 minute sessions for intervention pharmacists - with follow-up discussions every 3 months to ensure maintenance of fidelity of the intervention **Comparison (n= 78):** All clinics had a GP and a clinical pharmacist (either already available or assigned by the study). Pharmacists in the control group answered questions from physicians but did not provide recommendations to PCPs. Usual care was care received + an adherence message and BP goal written material provided to patients + lifestyle counseling by research nurses specifically recruited for this study + physician education on HTN guidelines via lectures and handouts	See Previous
Authors: Chabot et al. 2003 **Location** Quebec City, Quebec, CN **Setting and Scale:** Nine pharmacies selected based on their use of specific computer software (Phoenix for Windows 95) for prescription management and known for their provision of pharmaceutical care. **Design:** Other design w/concurrent comparison group	**Target Population (n=348):** Adult patients with hypertension **Inclusion:** Age 18 years and older + received at least 1 antihypertensive agent 30 days prior to the beginning of the study + intended to refill their prescriptions in person at the study site **Exclusion:** Patients whose antihypertensive regime had been modified over the past 3 months + those with a brachial circumference >41 cm + pregnant	**Team (Pharmacist Intervention):** **Team Member(s):** Community Pharmacist **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** Pharmacists were located in community pharmacies and referred to the PCP to verify drug interactions if non-adherence	**Change in SBP (mm Hg):** **Baseline: Mean** Usual care (n=59): 139.0 Intervention: (n=41): 141.0 **9m:** Usual care (n=59): NR Intervention (n=35): NR **Change in mean difference:** **low income group (n=22): +4.4** **high income group (n=13): -8.3** **overall sample = 1.95** **Change in DBP (mm Hg):** **Baseline: Mean** Usual care (n=59): 78.0 Intervention: (n=41): 78.0

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Quality of Execution: Fair (3 limitations) **Organization(s):** Authors affiliated with Laval University and Merck Frosst Canada Ltd. **Funding:** Fonds de la recherche en santé du Québec (FRSQ) + Fund for teaching and research – Laval University, School of Pharmacy **Applicability:** From this study, mainly to older female hypertensive patients in Canada who are generally adherent to their medication regimen. **Limitations:** Data Analysis: Inconsistent reporting of baseline outcomes for intervention groups Interpretation of Results: Groups not comparable at baseline; other bias due to a higher number of recommendations made to the high income group v. low income group	**Reported Baseline Demographics [Intervention Arm]:** Age (mean): 68.0 Sex: Female: 68%; Male: 32% Education: <H.S.: 27.0%; H.S. grad: 39.0%; post H.S.: 34.0% Income: Low: 54.0% **Reported co-morbidities:** NR	persisted >3 months and to reevaluate treatment. **Practice and Patient Support Components (n=41):** The pharmacist-led intervention consisted of: verification of drug interactions + use of decision-aid tool to assess adherence + developing a tailored adherence plan + treatment algorithm based on Canadian hypertension guidelines + lifestyle counseling + tracking response to treatment and making treatment recommendations to the PCP as needed + decision support tool which provided verbal and written interventions tailored to each patient **Systems Components:** Computer decision-aid software for prescription management **Training of team members:** Pharmacists and support staff received 2-hour training session on use of decision-aid software and BP measurement **Comparison (n= 59):** Usual care was received at the pharmacy	**9m:** Usual care (n=59): NR Intervention (n=35): NR **Change in mean difference:** **low income group (n=22): +2.5** **high income group (n=13): -2.5** **overall sample = 0.0** **Proportion Controlled (BP <140/90 mm Hg)** **Baseline:** Usual Care (n=59): 54.0% Intervention (n=41): 44.0% **9m:** Usual Care (n=59): NR Intervention (n=35): NR **OR:** **low income group (n=22): +1.11** **high income group (n=13): +6.2** **Additional Outcomes:** Adherence, lifestyle factors **Summary:** Overall, there was no statistically significant effect from the intervention. For high-income patients the intervention group had a greater reduction in mean SBP, DBP, and a greater proportion of patients with their BP controlled compared with the control group. There were also positive outcomes for physical activity, adherence, and factors affecting adherence for the high-income group only. For low-income patients, no statistically significant difference in SBP, DBP, or proportion with BP controlled was observed between the intervention and control groups.
Authors: Chen et al. 2010 **Location** San Francisco, CA **Setting and Scale:** Large academic hospital	**Target Population (N=10,000)** Active patients at San Francisco General Hospital Family Health Center diagnosed with hypertension or diabetes **Inclusion:** Patients transferred from graduating	**Team (Teamlet Group):** **Team Member(s):** nurses + medical assistants + health workers **PC Provider:** Physician (first year residents)	**Proportion Controlled (BP<140/90 mmHg):** **Baseline:** Usual care (n=395):41.4% Intervention (n=146): 48.7% **12m:** Usual Care (n=395): 45.4%

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
affiliated family health center (FHC) serving over 10,000 active patients with 41 resident trainees on staff **Design:** Other design with concurrent comparison group **Quality of Execution:** Fair (2 limitations) **Organization(s):** UCSF--Department Of Family and Community Medicine + San Francisco General Hospital **Funding:** California HealthCare Foundation + California Academic Chronic Care Collaborative **Applicability:** For this study, mainly to low-income, ethnically and racially diverse patients with diabetes or hypertension who seek treatment at a FHC in California. **Limitations:** Interpretation of Results: Contamination between the groups due to use of the same clinic + baseline characteristics not comparable	third year residents to incoming fist year residents + had at least one visit in the previous two years + spoke English, Spanish, Cantonese, or Mandarin **Exclusion:** Severe mental illness or dementia **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 62.4 yrs. Sex: Male: 37.0%; Female: 63.0% Language: Cantonese:24%; English: 36%; Spanish: 40% **Reported Co-morbidities:** Diabetes: 16.0%	**Type of TBC:** Only adherence support and information for current HTN meds provided **Team Interaction:** Team members were co-located and huddled during the first 30 minutes of clinic to discuss scheduled patients and prioritizing higher risk patients for coaching **Practice and Patient Support Components (n=146):** During a 12 month period, patients, health coaches and physicians worked in teams to improve CVD risk factors by providing the following: patient adherence plan + medication reconciliation + proactive patient follow-up +assessment of medication compliance + lifestyle counseling + provider assessment and feedback on team and patient communication + assisting patients in navigating the health system **Systems Components:** Patient registry **Training of team members:** Health coaches received training that focused on collaborative partnership with patients, action plans for healthy behavior change, medication adherence, and an overview of CVD risk factors. Residents received training on the Chronic Care Model + use of clinical guidelines + self-management support **Comparison (n=395):** The comparison group received	Intervention (n=146): 56.5% **Absolute pct. pt. change: +3.80 pct pts.** **Additional Outcomes:** LDL-C* + HbA1c* **Summary:** The use of a family medicine resident physician and a health coach (medical assistants and health workers) slightly improved proportion of patients at goal for LDL, HbA1c, and BP (all not significant) in the intervention group compared to the comparison group during a 12 month period; hence, indicating that the Teamlet Model may improve chronic care in primary care practices that serve predominantly low-income and ethnically/racially diverse populations.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	usual care from resident providers within the same clinic	See previous
Authors: Cohen et al. 2011 **Location** Providence, RI **Setting and Scale:** Providence VA Medical Center, size of patient pool not specified **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Department of Veterans Affairs **Funding:** Sandra A. Daugherty Foundation **Applicability:** Applicable to older male veterans diagnosed with type 2 diabetes along with other CVD risk factors such as hypertension and high cholesterol who seek care at a VA hospital **Limitations:** Description: Race/ethnicity nor SES reported Sampling: Inclusion criteria are not entirely clear Interpretation of Results: Groups not comparable at baseline for cholesterol outcomes	**Target Population (N=NR):** All patients with type 2 diabetes in the VA Medical Center (as recorded in the EMR system) **Inclusion:** Diagnosis of type 2 diabetes with A1c >7.0% or LDL >100 mg/dL or >70 for those with coronary artery disease or BP >130/80 mmHg **Exclusion:** patient with gestational diabetes mellitus + patient unable to attend group session for various reasons **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 69.8 yrs. Sex: Male: 100% Race/Ethnicity: NR Smoking: 14.0% **Reported Co-morbidities:** Coronary heart disease: 48.0% COPD: 14.0% Stroke: 4.0% Heart failure: 16.0%	**Team (SMA Group):** **Team Member(s):** pharmacist + nurse + dietitian + physical therapist **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Team and PCP were co-located **Practice and Patient Support Components (n=50):** Patients in this 6 month intervention attended 4 once-weekly 2 –hour session, followed by 5 monthly booster sessions held in a class room. Patients in this group received the following interventions: Patient education on disease condition + lifestyle counseling + patient education on meds + completion of drug profile +provider use of guidelines + tracking response to treatment + peer support via group sessions + provider reminders (both intervention and comparison groups) **Systems Components:** Electronic Medical Records **Training of team members:** NR	**Change in SBP (mmHg): Mean (SD)** **Baseline:** Usual care (n=49): 136.1 (16.5) Intervention (n=50): 136.1 (16.8) **6m:** Usual Care (n=49): NR Intervention (n=50): NR **mean difference =-8.39** **Proportion Control SBP (<130 mmHg):** **Baseline:** Usual care (n=49): 32.7% Intervention (n=50): 24.0% **6m:** Usual Care (n=49): 32.7% Intervention (n=50): 58.0% **Abs. percentage point change = +34.0 pct pts** **Additional Outcomes:** LDL* + A1c* **Summary:** Patients enrolled in the VA's pharmacist-led shared medical appointments (SMA) intervention group achieved significant improvements in SBP and glycemic goals compared to the control group during a six month period. After 6 months the intervention arm achieved target goals in A1c values (40.8% in cases vs. 20.4% in usual care, p=0.028) and SBP < 130 mmHg (58% cases vs. 32.7% in usual care, p=0.015) at rates significantly greater than the usual care arm, while nonsignificant differences were found for LDL (82.0 vs. 65.3%, p=0.059).

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	**Comparison (n=49):** The comparison group received usual primary care at the VA during their clinic visits. PCP had access to the same EMR system used in the intervention group	See previous
Authors: Edelman et al. 2010 **Location** Durham, NC + Richmond, VA **Setting and Scale:** 2 VA medical centers including 80 Primary care providers **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Dept. of Veterans Affairs **Funding:** Dept. of Veterans Affairs **Applicability:** For this study, mainly to, black veterans diagnosed with diabetes and HTN who received primary care at a VA medical center. **Limitations:** Interpretation of results- Reason for glycemic control not improving as significantly as BP control not given	**Target Population (N=609):** Patients with poorly controlled diabetes and hypertension. **Inclusion:** Enrolled in primary care at one of the VA clinics + diagnosis of HTN and diabetes + receiving meds for diabetes + HbA1c level ≥7.5% + BP ≥ 140/90 mm Hg **Exclusion:** Dual primary care outside the VA + enrolled in an endocrine clinic in last 6 months + hospitalization due to psychotic illness in last 3 years + cognitively impaired + reduced life expectancy from severe chronic illness **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 63.0 yrs. Sex: Female: 4.5%; Male: 95.5% Race/Ethnicity: Black/AA: 54.1%; White: 42.9%; Other 3.0% Education: <H.S.: 43.6%; >H.S.: 56.7 Low income: 31.6% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 100%	**Team (GMC group):** **Team Member(s):** RN + medical internist (MD) +pharmacist + diabetes educator + dietitians **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** All team members and PCP were co-located. Internist and pharmacist collaborated together to develop patient treatment plans; changes to meds were communicated via EMR, and lab results communicated via telephone. **Practice and Patient Support Components (n=133):** Patients were assigned to a group which consisted of 7 to 8 patients and a care team. The groups met seven times over 12 months, and each session included structured group interactions moderated by the educator, in addition to receiving the following from the care team: education on BP meds + drug profile completed + medication compliance assessed + lifestyle counseling + proactive follow-up visit every 2 months + tracking response to treatment + appointment reminder letters + travel reimbursement	**Change in SBP (mmHg):** **Baseline: Mean** Usual care (n=106): 152.9 Intervention (n=133): 152.9 **12.8m:** Usual Care (n=106): 146.5 Intervention (n=133): 139.2 **Change in mean difference = -7.3** **Change in DBP (mm Hg):** **Baseline: Mean** Usual care (n=106):84.5 Intervention (n=133): 84.5 **12.8m:** Usual Care (n=106): 82.1 Intervention (n=133): 78.3 **Change in mean difference = -3.8** **Proportion Controlled (≤130/80 mm Hg):** **Baseline:** Usual care (n=106): 0% Intervention (n=133): 0% **12.8m:** Usual Care (n=106): 12.0% Intervention (n=133): 22.0% **Absolute pct pt change = +10.0** **OR [95% CI]: 2.0 [1.0, 4.2]** **Additional Outcomes:** HbA1c level* + mean perceived competence score + medication adherence + HBA1c control at 6.8 m (midpoint) and 12.8 m (end of study); Utilization and Incidence of adverse events **Summary:** In patients diagnosed with HTN and diabetes and seek care at a VA clinic, the 12.8 month

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	**Systems Components:** EMRs/EHRs + telephone **Training of team members:** All educators (nurses, diabetes educators, dietitians) received instruction on facilitating group interactions. **Comparison (n=106):** Patients received usual care at the two VAMCs from their PCPs + travel reimbursement for regular visits	GMC intervention was found to dramatically reduce SBP and HbA1c levels. Additionally, DBP was lower in the intervention group compared to the control group, although the difference was not significant. Moreover, significant differences were not found in the intervention and control group for self-reported medication adherence and adverse events; however, patients in the intervention group had fewer emergency care visits than the control group.
Authors: El Fakiri et al. 2008 **Location** Low SES neighborhoods in Rotterdam and the Hague (the Netherlands) **Setting and Scale:** 5 general practices in the study neighborhoods comprising of 3 primary health care centers with a total of 18 GPs. Some primary care centers already had a GP, PN, a GP assistant, and a PHE on staff. **Design:** RCT **Quality of Execution:** Fair (4 limitations) **Organization(s):** STAR + MCH Hospital **Funding:** The Netherlands Organisation for Health Research and Development (ZON-MW) **Applicability:** From this study, mainly to low SES, diverse adult populations	**Target Population (N= 1665):** Patients (30–70 yrs. old) with ≥1 cardiovascular (CV) risk factors from medical records from one of three primary health care centers **Inclusion:** For the practice: General practice in a low SES neighborhood of Rotterdam or the Hague + a fully computerized information system + capacity to appoint a Peer Health Educator + fulfill national criteria to receive funding for a Practice Nurse. For patients: ≥ 1 registered CV factors or diseases including: hypertension + diabetes mellitus + hypercholesterolemia + personal and family history of CVD + smoking + measurements of blood pressure (BP) + >160/90 mmHg or total cholesterol >6.2 mmol/L **Exclusion:** Too ill to participate + received exclusive specialist care + planned to go abroad for ≥6 months **Reported Baseline Demographics [Intervention Arm]:** Age(mean): 55.8 yrs. Sex: Female: 39.0%; Male: 61.0%	**Team (GP+ PN + GP assistant + Peer Health Educator):** **Team Member(s):** Practice Nurse (RN + nurse practitioner + GP assistant + Peer Health Educator **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** A structured intake team meeting was attended by all team members to discuss prevention strategies according to information collected during the intake session, and to agree about which team members would be involved in implementing the preventive tasks. This meeting resulted in a 'treatment plan' tailored to the patient's risk factors and was reevaluated every 3 months. Three structured follow-up team meetings led by the PN were scheduled to discuss and evaluate the achieved results and bottlenecks encountered with regard to patient education, treatment and compliance.	**Change in SBP (mmHg)** **Baseline: Mean (SD)** Usual care (n=138): 150.9 (1.82) Intervention (n=137): 150.6 (2.15) **12m [ITT]:** Usual care (n=138): 144.6 (2.02) Intervention (n=137): 146.8 (1.78) **Change in mean difference [95%CI]= +2.36 [-2.55, 12.5]** **Change in DBP (mmHg)** **Baseline: Mean (SD)** Usual care (n=138): 89.7 (0.92) Intervention (n=137): 88.5 (1.19) **12m [ITT]:** Usual care (n=138): 89.6 (1.08) Intervention (n=137): 89.3 (1.13) **Change in mean difference [95%CI] = +0.21 [-2.6, 12.5]** **Additional Outcomes:** HbAc1* + Fasting glucose* + Total Cholesterol* + HDL-C* + LDL* + Triglycerides* + BMI + Absolute CVD risk **Summary:** This trial shows no benefit of adding a PN and a PHE in the general practice on cardiovascular risk among high-risk patients living in low SES neighborhoods. The fact that the cardiovascular risk profile in both study groups was improved is likely to be

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
receiving care at general practices with fully computerized patient record systems in the Netherlands that were willing to bring on a practice nurse (as a coordinator)and a peer health educator to deliver a structured program to reduce cardiovascular risk. **Limitations:** Data analysis: Implementation of the intervention was not uniform in all cases and was not controlled for. Interpretation of Results: >20% dropout; potential for contamination because the intervention was directed at practices and intervention might have transferred to the control group patients as well + unknown information on health education uptake by participants which might have made both groups very similar.	Race/Ethnicity: Dutch: 47.0%; Turkish: 23.0%; Other: 30.0% Education: Less than HS: 80.0%; HS grad: 14.0%; Post HS education: 7.0% Low income: 100% Smoking: 53.0% **Reported co-morbidities [Intervention Arm]:** Hypercholesterolemia: 50.0% Heart Disease: 30.0% Cerebrovascular Disease: 8.0%	**Practice and Patient Support Components (n= 137):** Intervention activities were based on a specially constructed protocol that described the procedures for the GP (first responsible and treatment decisions), PN (responsible for risk assessment, coordination and informative task), GP assistant (responsible for logistical tasks) and PHE (responsible for ethnic-specific health education). Intervention included: assessed medication compliance + assessed likelihood to comply with treatment which was incorporated into the treatment plan + use of a decision support tool for providers + patient education + proactive follow-up every 3 months + home outreach visit for BP and body weight + regular team meetings to evaluate and discuss progress+ individualized treatment plans were created for each patient **Systems Components:** EMR/EMH system **Training of team members:** Team members received specially constructed protocols that described procedures **Comparison (n= 138):** Participants received usual care plus in addition to a home outreach visit for BP and body weight	attributed to the structured measurements of the cardiovascular risk profile. The intervention and control group were similar and, consequently, it is possible that no effect could be detected in the intervention group.
Authors: Erickson et al. 2005 **Location** Ann Arbor, MI	**Target Population (N=NR):** Hypertensive patients who visited the study clinic during a 6-month period.	**Team (Medication Management System [MMS] group)** **Team Member(s):** clinical pharmacist + research assistant **PC Provider:** Physician	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=18): 148.0 (17.8) Intervention (n=19): 151.4 (13.0)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Setting and Scale: 1 hypertension-specialty outpatient clinic at a large university-affiliated medical center **Design:** Design with contemporaneous comparison group **Quality of Execution:** Limited (5 limitations) **Organization(s):** PolyPharm Corp. + University of Michigan, Ann Arbor **Funding:** PolyPharm Corp. **Applicability:** For this study, mainly to, older white women with a history of hypertension. **Limitations:** Description: Demographic characteristics poorly reported Sampling: No description of sampling frame Data analysis: Gender distribution >10% Interpretation of results: Sample size <20 + insufficient information on study design	**Inclusion:** ≥21 years old + diagnosis of HTN + English speaking + on two or more antihypertensive meds + BP ≥140/90 mm Hg in previous 3 months **Exclusion:** Secondary HTN + heart failure, COPD, rheumatic conditions, severe osteoarthritis, or taking >5 meds for all disease conditions **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 57.5 yrs. Sex: Female: 62.5%; Male: 37.5% Race/Ethnicity: White: 73.7%; other: 26.3% **Reported Co-morbidities:** NR	**Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Team members and PCP were not co-located; however, recommendations were communicated from the pharmacist to the PCP via fax. **Practice and Patient Support Components (n=22):** The intervention consisted of patients being given a device that acted as a medication storage container, data collector, and a patient reminder. Reports were generated monthly and recommendations were made by the pharmacist based on the results of the reports. Additionally, patients received the following support components: completed drug profile + assessment of medication compliance + creation of an adherence plan + initial home visit + tracking response to treatment + MMS reminders + tailored MMS program. **Systems Components:** Relay of clinical data + tech and data enabled resource via MMS system **Training of team members:** NR **Comparison (n=20):** Patients received standard medical care at the hypertension-specialty outpatient clinic within a large university-affiliated medical center.	**3m:** Usual Care (n=18): 151.4 (21.6) Intervention (n=19): 143.8 (12.8) **Change in mean difference = -11.0** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=18): 84.3 (8.00) Intervention (n=19): 89.0 (12.9) **3m:** Usual Care (n=18): 84.5 (6.50) Intervention (n=19): 84.6 (8.70) **Change in mean difference = -4.60** **Additional Outcomes:** Self-reported adherence scores **Summary:** For patients with a history of hypertension and part of the 3 month MMS intervention, there were non-significant reductions in SBP and DBP. For the control group however, SBP and DBP increased from baseline to 3 months. Additionally, non-significant improvements in self-reported adherence scores were observed between the intervention and control group. However, the limited quality of the study should be taken into consideration when interpreting these results.
Authors: Fiscella et al. 2010	**Target Population (N =914):** Patients attending federally qualified health clinics with hypertension,	**Team (clinician peer disease management):** **Team Member(s):** 12 family	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=179): 141.0 (15.4)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Location: NR, likely Rochester, New York per IRB approval **Setting and Scale:** 2 federally qualified health clinics participating in Health Disparities Collaborative employing 12 clinicians, 3 NPs, and 4 PAs **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Authors affiliated with University of Rochester Department of Medicine **Funding:** Robert Wood Johnson Foundation + Finding Answers Program **Applicability:** Applicable mainly to middle-aged, African American women who have public insurance and receive care from federally qualified health centers **Limitations:** Interpretation of results: sample needed to detect power not met; only 70% of sample analyzed (due to funding); potential for contamination underestimating results in intervention arm.	dyslipidemia, or diabetes **Inclusion:** ≥18 years old + SBP ≥140 mm Hg (≥130 in diabetics) OR LDL-C ≥130 mg/dL (≥100 in diabetics) OR A1c ≥ 7.0% **Exclusion:** NR **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 60.0 yrs. Sex: Female: 62.0%; Male: 38.0% Race/Ethnicity: African American: 76.0%; White: 14.0%; Hispanic: 4.0%; Other: 6.0% Insurance Status: Private Insurance: 33.0%; Medicare/Medicaid: 56.0%; Uninsured: 3.0%	physicians, 3 NPs, or 4 PAs **PC Provider:** 12 family physicians, 3 NPs, or 4 PAs **Team Member Role for meds:** Changes to meds can be made independent of PCP. All treatment decisions were summarized on a form with a copy provided to PCP. Team and patient met face-to-face **Practice and Patient Support Components (n=171):** All clinicians served as clinician peers to patients they did not see on a regular basis. Intervention consisted of 1 disease management session (30min.) focusing on any chronic disease not at goal including: drug profile completed via review of medication bottles + use of a treatment algorithm via electronic database which summarized patient data and recommended preventive services + provider reminders highlighting any clinical values not at goal + supervision and feedback from the Health Disparities Collaborative **Systems Components:** EMRs/EHRs + clinical information systems **Training of team members:** 3 training sessions on concurrent peer review visits held during staff meetings **Comparison (n=304):** Patients received care as usual with no clinician peer visit. Existing services provided by PCP included: treatment algorithm via electronic	Intervention (n=103): 142.0 (15.8) **12m: Mean (SE)** Usual Care (n=179): 139.0 (0.97) Intervention (n=103): 136.3 (1.19) **Change in mean difference = -3.70** **Additional Outcomes:** LDL-C levels* + A1c levels* + treatment intensification **Summary:** Clinician peer visits found a significant improvement in SBP and favorable but not significant improvements in LDL-C and A1c levels in middle-aged African American women who receive care from federally qualified health centers compared to the usual care group and those who did not complete a peer review visit. Treatment intensification during visits was significantly higher in the clinician peer group.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	database which summarized patient data and recommended preventive services + provider reminders highlighting any clinical values not at goal + supervision and feedback from the Health Disparities Collaborative.	See previous
Authors: Green et al. 2008 **Location** Washington State + Idaho **Setting and Scale:** 10 primary care medical centers with 3 to 4 physicians per center and each provider serving about 2100 patients on average annually **Design:** RCT **Quality of Execution:** Good (0 limitations) **Organization(s):** Group Health Cooperative, Settle, WA **Funding:** NHLBI **Applicability:** For this study: mainly to well-educated hypertensive patients enrolled in a group health plan who has internet access and are able to communicate with their providers via the internet. **Limitations:** N/A	**Target Population (N=9,298):** Hypertension patients on antihypertensive medication **Inclusion:** Between 25-75 years old + continuously enrolled in Group Health for at least one year + diagnosis of hypertension through an outpatient diagnostic code + BP >140/90 mmHg + ability to use a computer in English + regular access to the web + have an e-mail address + medication coverage that lets them refill prescriptions at Group Health **Exclusion:** heart disease + diabetes + renal failure + dementia + serious psychiatric disorders + treatment with chemotherapeutic, immunosuppressant, or antiretroviral agents + hospitalization within three months **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 59.3 yrs. Sex: Female: 55.9%; Male: 44.1% Race/Ethnicity: Black/AA: 8.0%; White: 79.3%; Asian: 4.6%; Other: 8.0% Education: H.S. grad: 8.0%; >H.S.: 92.0% High BMI: 90.4% (overweight + obese) Smoking: 6.9% **Reported Co-morbidities:** NR	**Team (Pharmacist + BP home monitors):** **Team Member(s):** Pharmacists **PC Provider:** Physicians **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Pharmacists and PCP were co-located and communicated via secure email as necessary. **Practice and Patient Support Components (n=261):** Pharmacist worked in conjunction with the patient's PCP using electronic messaging, the patient-shared medical record, and the office-based EMR to support ongoing care between office visits. Additionally, patients received the following services during their visits: completed drug profile + assessment of medication compliance + use of a treatment guideline + patient education on HTN + lifestyle counseling + proactive contact via email + tracking response to treatment + training on proper use of home BP monitor + provider reminder via a database + use of community resources **Systems Components:** EMRs/EHRs + clinical information	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=258): 151.3 (10.6) Intervention (n=261): 152.2 (10.4) **12m [ITT]:** Usual Care (n=258): 146.5 Intervention (n=261): 139.1 **Change in mean difference = -7.80** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=258): 89.4 (8.0) Intervention (n=261): 88.9 (8.1) **12m [ITT]** Usual Care (n=258): 86.0 Intervention (n=261): 82.7 **Change in mean difference = -2.90** **Proportion Controlled (BP<140/90mm Hg):** **Baseline:** Usual care (n=258): 0% Intervention (n=261): 0% **12m [ITT]:** Usual Care (n=258): 29.0% Intervention (n=261): 51.0% **Absolute pct pt change = +22.0** **Additional Outcomes:** # of HT meds + Aspirin use + BMI change + Quality of Life + CAHPS (process measure) score + healthcare utilization **Summary:** After 12 months, hypertensive patients enrolled in a group health plan and received a pharmacist care management intervention delivered through web communication had a

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	systems + home BP monitor + email/telephone **Training of team members:** Written protocol given to pharmacists + 2 in-person training/orientation sessions **Comparison (n=258):** All participants were registered to use Group Health's secure patient web services and given a HTN pamphlet on lifestyle behaviors and medication adherence. Patients randomized to this group were told their BP was uncontrolled and encouraged to work with their PCP to improve it.	non-significant increase in the proportion of patients with controlled BP. Significant decreases were observed in SBP and DBP after 12 months. Additionally, there was an increase in the number of hypertensive meds taken, as well as aspirin use; however, there were no significant changes observed for physical activity, health-related quality of life, and patient satisfaction compared to the comparison group.
Authors: Haskell et al. 2006 **Location** Santa Clara County, CA **Setting and Scale:** 3 primary care clinics +1 women's shelter providing free medical care + Medicare or Medi-Cal (California's Medicaid Program) **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Authors affiliated with Stanford University **Funding:** Health Trust; Cholestech, Inc. + Merck & Co., Inc.+ Pfizer Inc. + Bristol Myers Squibb Company + Kos Pharmaceuticals, Inc. + Abbott Laboratories + SmithKline Beecham	**Target Population (N=728):** Patients with limited/no health insurance + low family income + at increased CVD event risk **Inclusion:** 35 to 80 yrs.+ ≥ 1 major modifiable CVD risk factor+ currently receiving medical care at not-for-profit or free clinics or hospitals **Exclusion:** Recent history of serious medical condition + alcoholism **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 60.5 yrs. Sex: Female: 55.6%; Male: 44.4% Race/Ethnicity: Female: 55.6%; African American: 7.0%; White: 11.0%; Hispanic: 59.0% ; Asian: 11.0%; Other: 12.0% Education: < High school: 55.0%; High school graduate: 20.0%; Post high school: 24.0% Income: Low income: 100%	**Team (nurse-dietitian disease management):** **Team Member(s):** NP or specially trained nurse + dietitian **PC Provider:** NR **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** NR **Practice and Patient Support Components (n=99):** Patients received an individualized disease management (DM) program for 12m delivered by a specially trained nurse or NP and a dietitian including: drug profile completed + assessed med compliance + treatment algorithm based on national guidelines + lifestyle counseling + proactive follow-up visits every 6 to 8 weeks + tracking response to treatment by changing treatment plan as needed + ROPC for patients providing medications at little or no cost + supervision via	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=45): 141(3.0) Intervention (n=96):142 (2.0) **12m [ITT]:** Usual Care (n=45): 137 (2.8) Intervention (n=96): 128 (1.4) **Change in mean difference = -10.0** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=45): 82 (1.6) Intervention (n=96): 82 (1.1) **12m [ITT]:** Usual Care (n=45): 81 (1.5) Intervention (n=96): 76 (0.8) **Change in mean difference = -5.0** **Additional Outcomes:** Total cholesterol*+ HDL-C* + LDL-C* + HDL-C* + Triglycerides* + FBS* + aspirin use + lifestyle risk factors + QOL + medication types **Summary:** The nurse-dietitian DM program achieved significant decreases in a number of CVD risk

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: For this study, mainly to low-income Hispanic women in their early 60s who either have no health insurance or have public health insurance and receive care from clinics that provide free medical care. **Limitations:** Description: intervention not well described, unclear of nurse and dietitian roles, and extent of physician supervision; Interpretation of results: baseline groups not comparable	Insurance status: Medicare/Medicaid: 20.0%; Uninsured: 65.0% BMI (mean): 30.4 (obese) Smoking: 10.3% **Reported Co-morbidities [Intervention Arm]:** Personal hx of CHD: 24.5%	study physician + family involvement **Systems Components:** telephone **Training of team members:** NR **Comparison (n= 45):** Patients continued to receive medical care from the clinic which they were recruited. No additional intervention was given. At the end of 12m comparison participants were invited to receive the DM program.	factors compared with the usual care group, including blood pressure, blood lipid profile, and fasting blood sugar in mainly Hispanic women receiving care from free clinics and who are at an increased risk of a CVD event. In addition, there was a highly significant increase in the use of aspirin.
Authors: Hennessy et al. 2006 **Location** Pennsylvania **Setting and Scale:** University affiliated outpatient primary care clinics **Design:** RCT **Quality of Execution:** Fair (4 limitations) **Organization(s):** University of Pennsylvania Health System **Funding:** Frontiers Fund Research Award + Pfizer + AstraZeneca **Applicability:** For this study, mainly to, middle-age hypertensive white women in the University of Pennsylvania Health System taking at least 1	**Target Population (N=10,696):** Hypertension patients from University of Pennsylvania affiliated ambulatory clinics with an EMR system. **Inclusion:** Diagnosis of HTN based on ICD-9 codes + use of a clinic that has an EMR **Exclusion:** NR **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 62.1 yrs. Sex: Female: 54.0%; Male: 46.0% Race/Ethnicity: Black/AA: 38.0%; White: 53.0%; Other: 4.0% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 30.0% Kidney disease: 11.0%	**Team (Academic Detailing by Clinical Pharmacists Group):** **Team Member(s):** clinical pharmacist **PC Provider:** physicians + nurse practitioners **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Pharmacists and PCPS were co-located and met face-to-face to conduct academic detailing visits and to provide audit and feedback reports. **Practice and Patient Support Components (n=5401):** A clinical pharmacist conducted academic detailing visits based on JNC and NHBLI guidelines. The pharmacist presented provider-specific audit reports + educational materials on HTN to be mailed to patients + lifestyle counseling	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=5295): 136.0 (18.0) Intervention (n=5401): 134.0 (18.0) **12m:** Usual care (n=NR): 133.0 (17.1) Intervention (n=NR): 131.0 (16.8) **Change in mean difference [95%CI] = -1.8 [-4.0, 0.4]** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=5295): 80.0 (11.0) Intervention (n=5401): 79.0 (11.0) **12m:** Usual care (n=NR): 77.0 (10.4) Intervention (n=NR): 77.0 (10.2) **Change in mean difference [95%CI] = +0.04 [1.1, -1.1]** **Proportion Controlled (BP<140/90 mm Hg):** **Baseline:** Usual care (n=5295):53.0% Intervention (n=5401): 54.0% **6m [observed]:** Usual care (n=3542): 62.0% Intervention (n=3617): 66.0%

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
antihypertensive medication. **Limitations:** Description: Lack of control group details; Interpretation of results- Follow-up < 80%; possible contamination of the control group providers; groups not comparable at baseline	See Previous	booklets on diet **Systems Components:** EMRs/EHRs **Training of team members:** NR **Comparison (n=5295):** The control group received no intervention; no background information was provided.	**Absolute pct pt change= +3.0** **6m [ITT]** Usual care (n=5295):35.8% Intervention (n=5401): 35.8% **Absolute pct pt change = -1.0** **OR [95%CI]: 1.13 [0.87-1.47]** **Additional Outcomes:** NR **Summary:** Hypertensive patients seen in a clinical pharmacist academic detailing intervention clinic had modest improvements in SBP after 12 months; BP control improved 3 percentage points over 6 months. Contrarily, DBP worsen during the intervention.
Authors: Hicks et al. 2007 **Location** Boston, MA **Setting and Scale:** 8 community-based primary care clinics + 6 hospital-based primary care clinics **Design:** RCT **Quality of Execution:** Fair (2 limitation) **Organization(s):** Authors affiliated with Brigham and Women's Hospital + Harvard Medical School **Funding:** Agency of Healthcare Research and Quality (AHRQ) + RWJF **Applicability:** For this study, mainly to, multiethnic adults (majority women) with HTN who have	**Target Population (N=5,138):** Adults diagnosed with HTN who visited one of the study clinics **Inclusion:** >20 years old + at least 2 HTN related outpatient visits to one of the study clinics during a one year period before the beginning of the intervention **Exclusion:** Patients with unknown race/ethnicity **Reported Baseline Demographics** **Arm 1:** Age (median): 61.0 yrs. Sex: Female: 69.0% ; Male: 31.0% Race/Ethnicity: Black/AA: 55.0%; White: 20.0%; Hispanic: 19.0%; Other 6.0% Insurance: Private: 23.0%; Medicare: 24.0%; Medicaid: 14.0%; Self-pay/free care:38.0% **Arm 2:** Age (median): 62.0 yrs. Sex: Female: 74.0% ; Male: 26.0% Race/Ethnicity: Black/AA: 53.0%; White: 24.0%; Hispanic: 16.0%; Other	**Team (NP case-management group):** **Team Member(s):** Nurse practitioner **[both intervention arms]** **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **[both intervention arms]** **Team Interaction:** Team members and PCPs were co-located. NP communicated with PCP any changes to meds via email or pager. **Practice and Patient Support Components** **Arm 1 [NP in UC group] (n=120):** Hypertensive patients in this 18 month intervention received usual care that was co-managed by a NP and a physician who did not received the computerized decision support tool. The NP delivered the following to patients in this group:	**Change in SBP (mm Hg) [NP co-management vs. non-NP]** **Baseline: Mean Baseline** Usual care (n=1834): 137.0 (between groups) Intervention (n=193): 137.0 (between groups) **18m[ITT]:** Usual Care (n=1834): 137.0 Intervention (n=193): 139.0 **Change in mean difference = +2.0** **Change in DBP (mm Hg) [NP co-management vs. non-NP]** **Baseline: Mean (SD)** Usual care (n=1834): 79.0 (between groups) Intervention (n=193): 78.0 (between groups) **18m [ITT]:** Usual Care (n=1834):77.0 Intervention (n=193): 77.0 **Change in mean difference = +1.0** **Proportion Controlled (BP<140/90 mm Hg):** **Baseline** Usual care (n=1834): 43.5% Intervention (n=193): 34.0% **18m [ITT]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
health insurance and seek care at an urban university affiliated primary care clinic. **Limitations:** Sampling- Very small sample size in NP group compared to control group Interpretation- Groups not comparable by gender, race, and insurance status	6.0% Insurance: Private: 37.0%; Medicare: 18.0%; Medicaid: 8.0%; Self-pay/free care:37.0% **Reported Co-morbidities:** NR	assessed medication compliance + proactive follow-up + developed reminders to fill prescriptions and appointments + tracking response to treatment **Arm 2 [NP in CDS group] (n=73):** Hypertensive patients in this group were co-managed by a NP along with a provider who received the CDS tool. The CDS tool used evidence-based guidelines to make recommendations for the PCP to consider based on an algorithm. Additionally, the NP assessed medication compliance + proactive follow-up + developed reminder to fill prescriptions + tracking response to treatment + appointment reminders + provider reminder from global emails linked to CDS **Systems Components:** EHRs/EMR (pre-existing) + other systems via email, telephone, and pager **[both intervention arms]** **Training of team members:** NR **Comparison (n=1834):** Patients in this group either received usual care or were assigned to a PCP who received the CDS tool during the 18 month intervention. NPs were not located in these settings, thus NPs and PCPs did not co-manage the patients. PCPs who were assigned the CDS tool used it to make evidence-based recommendations based on reminders that popped-up on their computer monitor.	Usual Care (n=1834): 47.0% Intervention (n=193): 35.0% **Absolute pct pt change= +2.5** **OR [95%CI] =0.88 [0.61, 1.27]** **Additional Outcomes:** JNC adherent prescribing **Summary:** The 18 month NP co-management intervention on hypertensive adults did not have an impact on SBP or DBP. Likewise, the NP co-management intervention was found to not have a significant effect on controlling BP. Physicians who were provided with the CDS tool were found to have increased medication prescribing compared to those physicians without the CDS tool.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Hill et al. 2003 **Location** Baltimore, MD **Setting and Scale:** 1 outpatient general clinic research center + home visits + Telephone calls **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Outpatient General Clinic Research Center + Johns Hopkins University **Funding:** National Institute of Nursing Research + NIH-NCRR + Outpatient General Clinical Research Center (OPD-GCRC) + WA Baum and Co. + Merck & Co. **Applicability:** For this study, mainly to, inner-city, low-income, hypertensive African American males with a high rate of illicit drug use or obesity. **Limitations:** Interpretation of results: Baseline groups not comparable by insurance status; potential for contamination based on control group receiving the same activities as intervention group	**Target Population (N=821):** Hypertensive African American males residing in inner city Baltimore **Inclusion:** 21-54 yrs. old +SBP >140 mm Hg and DBP >90 mm Hg on 2 separate occasions + on or off antihypertensive medication **Exclusion:** Renal dialysis + acute or terminal illness + serious mental illness + participant in another hypertension trial **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 41.0 yrs. Sex: Male: 100% Race/Ethnicity: Black/AA: 100% Low income: 68.0% ($<10,000) Insurance: uninsured: 54.0% Smoking: 84.0% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 7.0% Hypercholesterolemia: 32.0% Substance abuse: 40.0% Overweight or Obese: 56.0%	**Team (More Intensive Group):** **Team Member(s):** Nurse practitioner + CHW **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** NR **Practice and Patient Support Components (n=157):** Patients in the more intensive intervention group received protocol-based comprehensive educational, behavioral, and pharmacologic interventions given by a NP/CHW/MD team. Services provided included: drug profile completed + telephone reminders of BP goals + home visits from CHWs + referral services to social workers + ROPC via free medication + individualized treatment plans **Systems Components:** Telephone **Training of team members:** NR **Comparison (n=152):** Patients in the less intensive group were referred to sources of hypertension care in the community + reminded of the importance of BP control every 6 months via telephone call or annual visit.	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=152): 147.5 (20.9) Intervention (n=157): 146.8 (19.4) **36m:** Usual care (n=106): NR Intervention (n=125): NR **Change in mean difference = -10.9** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=152): 98.5 (14.9) Intervention (n=157): 99.4 (14.5) **36m:** Usual care (n=106): NR Intervention (n=125): NR **Change in mean difference = -6.4** **Proportion Controlled (BP<140/90mm Hg):** **Baseline:** Usual care (n=152): 21.0% Intervention (n=157): 17.0% **36m [observed]:** Usual care (n=106): 31.0% Intervention (n=125): 44.0% **Absolute pct pt change= +17.0** **36m [ITT]:** Usual care (n=152): 22.0% Intervention (n=157): 35.0% **Absolute pct pt change = +17.0** **Additional Outcomes:** TC* + HDL* + Diabetes* + BMI > 30 (at 3 years) + serum creatinine + LVM + NP/MD use + antihypertensive use - at 3 years **Summary:** For low-income, inner-city African American males who took part in this 36 month study, the intervention was found to significantly reduce SBP and DBP in both groups, while also increasing the proportion of individuals that achieved target BP. Additionally, LVM increased in both groups, and serum

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	See previous	creatinine showed a trend towards lower incidence after 36 months in the intervention group than the comparison group.
Authors: Hunt et al. 2008 **Location:** Oregon **Setting and Scale:** Clinics within the Providence Research Network - a not-for-profit integrated delivery care system comprising approx.: 80 physicians and 110,000 patients in Oregon **Design:** RCT **Quality of Execution:** Fair (4 limitations) **Organization(s):** Providence Primary Care Research Network **Funding:** Grant from Boehringer Ingelheim – pharma company **Applicability:** From this study, mainly to older adults (65+) including those on Medicare/Medicaid who receive care from pharmacists with expertise in BP management and work with physicians in an integrated care system with access to systems support like EMRs. **Limitations:** Description: No race/ethnicity data reported Interpretation of Results: Potential for contamination as	**Target Population (N= 2,901):** Patients with hypertension currently attending included study clinics **Inclusion:** A last systolic BP >= 160 mm Hg and/or a last diastolic BP >= 100 mm Hg + had an office visit within the past 2 years + a problem list entry of hypertension (ICD-9 of 410) **Exclusion:** No blood pressure reading in medical chart in the previous 2 years + attended a visit with a pharmacy practitioner in the previous 6 months + had transferred care out of the Network **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 68.0 yrs. Sex: Female: 63.0%; Male: 37.0% Education: Post high school (college education): 28% Insurance status: Insured: 37.0%; Medicare/Medicaid: 63.0% BMI (mean): 29.0% (overweight) Smoking: 9.0% **Reported co-morbidities [Intervention Arm]:** Diabetes: 26.0% Patients w/one or more chronic conditions: 48%	**Team (Pharmacist Care):** **Team Member(s):** Pharmacist w/advanced pharmacy degree and 1-2 years of ambulatory medicine residency training **PC Provider:** Physician (MD) **Team Member Role for meds:** Changes to meds can be made w/PCP approval/consultation **Team Interaction:** Pharmacists documented each patient visit in the EMR system which was forwarded to the PCP for approval and co-signature. No details on mode of communication between PCP and pharmacist was reported **Practice and Patient Support Components (n= 230):** Pharmacists collaborated with patients and intervention included: patient education on BP meds + drug profile completed + assessed medication compliance + use of treatment algorithm based on network guidelines + patient education on hypertension + lifestyle counseling **Systems Components:** EMRs **Training of team members:** NR **Comparison (n= 230):** Usual-care patients continued their normal schedule of medical care. In addition they received: patient education on hypertension + patient prompts when there was no	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=230): 174.0 (15.0) Intervention (n=230): 173.0 (15.0) **12m [observed]** Usual care (n=130): 143.0 (18.0) Intervention (n=142): 137.0 (17.0) **Change in mean difference = -6.0** **12m [ITT]** Usual care (n=230):148.0 (22.0) Intervention (n=230): 142.0 (19.0) **Change in mean difference =-5.0** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=230): 92.0 (14.0) Intervention (n=233): 90.0 (14.0) **12m [observed]:** Usual care (n=130): 78.0 (11.0) Intervention (n=142): 75.0 (9.0) **Change in mean difference = -3.0** **12m [ITT]:** Usual care (n=230): 80.0 (12.0) Intervention (n=233): 77.0 (10.0) **Change in mean difference = -1.0** **Proportion Controlled (BP<140/90 mm Hg):** **Baseline:** Usual care (n=233): 0% Intervention (n=230): 0% **12m [observed]:** Usual care (n=130): 44.0% Intervention (n=142): 62.0% **Absolute pct pt change = +18.0** **12m [ITT]:** Usual care (n=233) Intervention (n=230) **Absolute pct pt change= +12.0** **OR [95% CI] = 2.08 [1.29, 3.38]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
providers saw both intervention and control patients; recruitment rate < 20%; follow-up < 80%	See Previous	scheduled appointment + physician prompts for patients with elevated BP	**Additional Outcomes:** Self-management knowledge, medication adherence, resource utilization, quality of life, and satisfaction with care **Summary:** Involvement of pharmacists in hypertension care significantly improved blood pressure control and significantly reduced systolic and diastolic BP in mainly older adults receiving public health insurance (Medicare/Medicaid). In addition this intervention resulted in an increase of total office visits, with a significant decrease in number of physician visits. The addition of a pharmacy practitioner did not significantly alter patient quality of life or satisfaction.
Authors: Ishani et al. 2011 **Location** Minneapolis, MN **Setting and Scale:** 1 VA hospital clinic **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Veterans Affairs **Funding:** Veterans Integrated Service Network **Applicability:** For this study: mainly to, male veterans with co-morbid illnesses (diabetes, uncontrolled BP and high cholesterol) **Limitations:** Sampling: Randomized patients	**Target Population (N=3,392):** Patient diagnosed with diabetes who received primary care through the VA system. **Inclusion:** HbA1c >9/0% + LDL-C >100mg/dL +BP >140/90 mmHg **Exclusion:** Life expectancy < 1 year + severe mental health condition or substance abuse + pregnancy (or planning on becoming pregnant) + living in an assisted living facility + unable to give consent **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 64.9 yrs. Sex: Female: 0.4%; Male: 99.6% Race/Ethnicity: Black/AA: 5.0%; White: 93.2%; Other: 1.4% BMI (mean): 33.5 (obese) Smoking: 11.9% **Reported Co-morbidities [Intervention Arm]:**	**Team (Case management intervention group):** **Team Member(s)**: Registered nurse **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Team members and the majority of PCPs were co-located. PCPs within the VA system communicated with team members via an EMR system; those outside the system were notified of changes to meds via mail. **Practice and Patient Support Components (n=278):** Patients were asked to set lifestyle modification goals and then given a home BP monitor. Case nurses monitored BP results and contacted patients every 2 weeks initially, with the frequency of contact decreasing as patient achieved goal	**Proportion Controlled (BP<130/80mm Hg):** **Baseline:** Usual care (n=278): 44.1% Intervention (n=278): 44.1% **12m:** Usual Care (n=278): 45% Intervention (n=278): 25.5% **Absolute pct pt change = +19.5** **Additional Outcomes:** LDL-C* + HbA1c* + # of medications taken **Summary:** At the end of the 12 month period, a greater number of VA patients with diabetes assigned to the intervention group achieved the primary study outcome of having all three intervention (BP, LDL, and HbA1c) measures under control. Furthermore, patients in the intervention group were more likely to achieve greater medication use.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
didn't meet inclusion criteria Measurement: No report of DBP at follow-up Interpretation of results: Study personnel not blinded	Congestive heart failure: 13.7% Diabetes: 100%	BP. During telephone contact, the case manager reviewed the patient's tailored adherence plan + used protocol guidelines + educated patient on HTN + gave lifestyle counseling + tracked response to treatment **Systems Components:** EMRs/EHRs + Home BP monitor **Training of team members:** NR **Comparison (n=278):** Patients in the usual care group were encouraged to continue managing their diabetes, BP, and lipids under the direction of their PCP. All patients were given education information on their disease specific condition + a presentation from a dietitian on the DASH diet.	See Previous
Authors: Johnson et al. 2011 **Location** Baltimore, MD **Setting and Scale:** 2 large academic primary care practices **Design:** RCT **Quality of Execution:** Fair (4 limitations) **Organization(s):** Baltimore Cardiovascular Partnership (a community-university collaboration) + University of Maryland Medical System **Funding:** NHLBI	**Target Population (N=670):** Adults with hypertension **Inclusion:** ≥18 years old + documented hypertension defined as ≥140/90 mm Hg in patients without diabetes and ≥130/80 mm Hg in patients with diabetes + ability to sign a written consent form **Exclusion:** Medical conditions or treatments that would preclude standard hypertension drug therapies **Reported Baseline Demographics** **Intervention Arm 1:** Age (mean): 57.0 yrs. Sex: Female: 74.4%; Male: 25.6% Race/Ethnicity: Black/AA: 93.0%; White: 7.0% Smoking: 25.6%	**Team (Nurse Led Patient Education):** **Team Member(s):** Registered nurse **[both intervention arms]** + 2 hypertension specialists **[Arm 2 only]** **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **[both intervention arms]**. **Team Interaction :** Team members and PCP were co-located; however, information on interaction between nurse and PCP was not reported **Practice and Patient Support Components** **Arm 1[Patient Education]**	**Change in SBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=57): 143.0 (16.7) Intervention (n=43): 153.0 (17.8) **6m:** Usual Care (n=49): NR Intervention (n=34): NR **Change in mean difference = -2.0** **Baseline Arm 2: Mean (SD)** Usual care (n=57): 143.0 (16.7) Intervention (n=249): 150.0 (18.5) **6m:** Usual Care (n=49): NR Intervention (n=223): NR **Change in mean difference = -9.40** **Change in DBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=57): 84.0 (11.2) Intervention (n=43): 90.0 (13.8) **6m:** Usual Care (n=49): 78.0 (11.4)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: For this study, mainly to middle-aged hypertensive African American women receiving care from 1 of two large practices within a university healthcare system. **Limitations:** Sampling: recruitment of patients not well described and total number of eligible patients not reported Interpretation of results: Follow-up <80% in patient education group; sample size difference >25% between groups; sample needed to detect power not met	**Intervention Arm 2:** Age (mean): 55.0 yrs. Sex: Female: 68.7%; Male: 31.3% Race/Ethnicity: Black/AA: 92.8%; White: 5.2%; Other: 2.0% Smoking: 18.9% **Reported Co-morbidities:** Diabetes: 37.2% (Arm 1); 44.6% (Arm 2)	**(n=43):** Patients received a tailored 30-minute personal counseling session with the study nurse every 6 months in which a medication adherence plan + lifestyle counseling on diet + self-monitoring were discussed. **Arm 2 [Patient + Provider Education] (n=249):** Patients in this group received all the services given to the nurse-led patient education group. Additionally, physicians of patients in this group received a 90-minute physician education intervention every two months from a hypertension specialist and other guest. **Systems Components:** NR **Training of team members:** NR **Comparison (n=57):** Usual care physicians and patients did not receive any hypertension education or intervention.	Intervention (n=34): 80.0 (12.8) **Change in mean difference = -4.00** **Baseline Arm 2: Mean (SD)** Usual care (n=57): 84.0 (11.2) Intervention (n=249): 90.0 (11.6) **6m:** Usual Care (n=49): 78.0 (11.4) Intervention (n=223): 82.0 (12.4) **Change in mean difference = -2.00** **Proportion Controlled (BP<140/80 mm Hg or BP<130/80 mm Hg for diabetics)** **Baseline Arm 1:** Usual care (n=57): NR Intervention (n=43): NR **6m:** Usual Care (n=49): 2.7% Intervention (n=34): 42.1% **Absolute pct pt change= 39.4** **Baseline Arm 2:** Usual care (n=57): NR Intervention (n=249): NR **6m:** Usual Care (n=49): 2.7% Intervention (n=223): 38.6% **Absolute pct pt change = 35.9** **Baseline [arms collapsed]** Usual care (n=57): 0% Intervention (n=292): 0% **6m [ITT; arms collapsed]** Usual care (n=57): 2.3% Intervention (n=292): 34.3% **Absolute pct pt change = 32.0** **Additional Outcomes:** Blood glucose* + weight **Summary:** The 6-month patient-provider education intervention for hypertensive African American women had the greatest reduction in SBP when compared to the patient

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	See previous	education intervention group and usual care. The greatest reductions in DBP were found in the education-only group. Prop. controlled increased in all 4 groups, with the greatest gains occurring in the education-only group.
Authors: Katon et al. 2010 **Location:** Seattle, WA **Setting and Scale:** 14 primary care clinics in the Group Health Cooperative employing 151 primary care physicians. **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Group Health Cooperative **Funding:** NIMH + Group Health Cooperative + Wyeth + Eli Lilly + Forest + Pfizer + Prescott Medical + HealthSTAR Communications + World Psychiatry Association + John A. Hartford Foundation + Rewarding Health + Samepage + Roche Diagnostics **Applicability:** From this study, mainly to insured white, middle-aged obese persons with co-morbid illnesses of coronary heart disease and/or diabetes, with depression **Limitations:** Interpretation of results:	**Target Population (N =924):** Patients with depression and either poorly controlled diabetes, coronary heart disease, or both receiving care from the Group Health Cooperative **Inclusion:** One or more of the following: BP >140/90mm Hg + LDL cholesterol level > 130 mg/dL (3.4 mmol/l) or glycated hemoglobin level of 8.5% or higher +were ambulatory + spoke English +planned to be enrolled in an HMO plan for 12 months, + PHQ-2 (depression score) ≥ 3, + PHQ-9 (depression score) ≥ 10 **Exclusion:** Terminal illness + resident in a long-term care facility + severe hearing loss + planned bariatric surgery within 3 months + pregnancy or breastfeeding + ongoing psychiatric care + major psychiatric illness + use of an antipsychotic or mood-stabilizer + dementia **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 57.4 yrs. Sex: Female: 48.0%; Male: 52.0% Race/Ethnicity: Other: 25.0% (Minority race or ethnic group: non-white or Hispanic); NR: 75.0% Education: H.S. or more.: 61.0% Insurance: Private: 100.0% BMI (mean): 36.9 (obese) **Reported Co-morbidities [Intervention Arm]:**	**Team (Nurse - Collaborative Case Management):** **Team Member(s):** 3 part-time RNs with experience in diabetes education + psychiatrist + psychologist + primary care physician (not the patients' PCP) **PC Provider:** Physicians **Team Member Role for meds:** Changes to meds can be made w/PCP approval **Team Interaction:** Team members and PCP were co-located. Nurses were supervised by a psychiatrist, psychologist, and the primary care provider. Supervising physicians made medication recommendations which were communicated to the PCP by the RN face-to-face. Nurses and patients met face-to-face. **Practice and Patient Support Components (n=106):** Patients received a 12-month collaborative care intervention with a maintenance plan developed after reaching treatment goals. This nurse-led intervention included: developing a medication adherence plan + utilizing a treatment algorithm + proactive follow-up visits every 2-3 weeks + telephone follow-up as needed during maintenance + tracking response to treatment + self-management training and support for patients by receiving BP and glucose monitoring	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=106): 131.9 (17.0) Intervention (n=105): 135.7 (18.4) **12m: Mean (SE)** Usual care (n=106): 132.3 (17.4) Intervention (n=105): 131.0 (18.2) **Change in mean difference [ITT] = -5.1** **Additional Outcomes:** LDL cholesterol* + proportion with ≥ 10mm Hg decrease in SBP + Glycated hemoglobin + Patient Global Rating of Improvement Score + SCL-20 depression score + adherence to recommended diet and exercise + frequency of medication adjustments **Summary:** Results suggest that an intervention involving proactive follow-up by nurse care managers working closely with physicians, integrating the management of medical and psychological illnesses, and using individualized treatment regimens guided by treat-to-target principles improved both medical outcomes and depression in depressed patients with diabetes, coronary heart disease, or both compared to the comparison group.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Potential for contamination as PCPs cared for patients in both the intervention and usual care groups	Diabetes: 89.0% CAD: 23.0% Depression: 100%	devices + weekly supervision of nurses by a psychologist, psychiatrist, and primary care physician + tailored clinical and self-care goals for patients **Systems Components:** Pre-existing EMR system + electronic BP and blood glucose monitors + an electronic registry to track PHQ-9 scores and glycated hemoglobin, LDL cholesterol, and blood-pressure levels + telephone follow-up **Training of team members:** Study nurses attended a 2-day training course on depression management, behavioral strategies, and glycemic, blood-pressure, and lipid control. **Comparison (n=108):** Patients received care as usual which included self-referral or physician referral to mental health care. Patients in this group were advised to consult with their PCP and receive care for depression, diabetes, and coronary heart disease. With the patients' permission the PCP was notified about patient's health status and received laboratory test results at baseline, 6 months, and 12 months.	See Previous
Authors: Landon et al. 2007 **Location** U.S.A. (nationwide study) **Setting and Scale:** 14 community health centers serving 13,057 patients	**Target Population (N=3,362)** CHC patients with diabetes, asthma, or hypertension. **Inclusion:** Patients seen at a CHC at least once during a relevant measurement year and at least once before the measurement year.	**Team (HTN Intervention Center):** **Team Member(s):** Unspecified improvement team **PC Provider:** NR **Team Member Role for meds:** Only adherence support and information for current HTN meds provided	**Proportion Controlled (BP<140 mm Hg; <130/80 mm Hg for diabetics)** **Baseline (-6m):** Usual care (n=NR): 54.0% Intervention (n=NR): 46.0% **6m[observed]:** Usual Care (n=NR): 63.0% Intervention (n=NR): 53.0% **Absolute pct pt change =-2.0**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Design: Design with contemporaneous comparison group **Quality of Execution:** Limited (5 limitations) **Organization(s):** HRSA **Funding:** HRSA (for the intervention) + AHRQ and the Commonwealth Fund (for the study) **Applicability:** For this study, mainly to, ethnic and racial minorities around the US who receive care at CHCs. **Limitations:** Description: Lacked information on specific disorders targeted Measurement: Difficult to know how many of the practice sites in a given CHC were exposed to what degree of the intervention Interpretation of results: groups not comparable at baseline; effect size attributed to intervention with insufficient details	**Exclusion:** End-stage renal disease + cancer + HIV infection + pregnancy + <18 years old **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 56.1 yrs. Sex: Female: 56.2%; Male: 43.8% Race/Ethnicity: Black/AA: 13.2%;White: 52.3%; Hispanic: 23.0%; Other: 11.5% Insurance: Private: 15.7%; Medicaid: 17.1%; Medicare: 28.3%; Other 9.0% **Reported Co-morbidities:** NR	**Team Interaction:** NR **Practice and Patient Support Components (n=46):** No specific details were given for patients with HTN; however, CHCs in all three intervention arms received the following: expert clinical decision tools + education on HTN + lifestyle counseling + tracking response to treatment + patient reminders for missed appointments + self-care support via community linkages + guideline education for providers + performance report on patients **Systems Components:** Patient registries + enhanced data collection system **Training of team members:** Kickoff meeting + 2-day learning sessions: training in QI techniques, the use of a software registry program and the Chronic Care Model **Comparison (n=54):** CHC that were not part of any collaborative provided regular usual care services available at their centers.	**Additional Outcomes:** glycated Hb* + prevention, screening, monitoring and treatment process outcomes + composite scores for clinical outcomes and process outcomes **Summary:** For hypertensive patients who took part in the collaborative intervention, the intervention was found not to improve blood pressure control rates. In fact, BP control rates worsened within the one year collaborative period for the intervention and control group. Moreover, the intervention did not improve additional outcomes such as glycated Hb levels and hospitalization rates; however, there were significant improvements in the measures of prevention and screening. It is important to note the limited quality of this study when interpreting the results.
Authors: Lee et al. 2006 **Location** Washington, D.C. **Setting and Scale:** 1 large tertiary US military hospital (with a pharmacy) + 1 retirement home with approximately 900 retirees	**Target Population (N=208):** Military veterans from Walter Reed Army Hospital and the Armed Forces Retirement Home who are taking at least 4 chronic medications daily **Inclusion:** >65 years old + living independently **Exclusion:** Assisted living or nursing home residents + any serious medical	**Team (Pharmacy care group):** **Team Member(s):** Pharmacist **PC Provider:** NR **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** No information on PCP and pharmacist interaction was	**Change in SBP (mm Hg)** **Baseline Mean (SD):** Usual care (n=76): 135.0 (20.3) Intervention (n=83): 133.4 (17.6) **12m:** Usual Care (n=62): 133.3 (21.5) Intervention (n=73): 124.4 (14.0) **Change in mean difference = -5.9**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Design: Contemporaneous comparison group **Quality of Execution:** Good (1 limitation) **Organization(s):** Veteran's Affairs (Walter Reed Medical Center + Armed Forces Retirement Home) **Funding:** American Society of Health-System Pharmacists Research and Education Foundation (TRUE Research Foundation) + one co-author reported receiving research grants and honoraria from several pharm companies. **Applicability:** For this study, mainly to, older veterans with multiple chronic conditions who are eligible for free medical service at a military medical center. **Limitations:** Interpretation of results: Groups not comparable at baseline	condition with <1 year survival expected **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 77.0 yrs. Sex: Female: 25.3%; Male: 74.7% Race/Ethnicity: Black/AA: 34.9%; White: 61.4%; Other: 3.7% Education: <H.S.: 3.7%; H.S. grad: 32.1%; >H.S.: 64.2% **Reported Co-morbidities:** Hypercholesterolemia: 83.1% >4 chronic conditions: 62.7%	provided; PCP and pharmacist were not co-located since both Walter Reed and the retirement home had on-site pharmacies. **Practice and Patient Support Components (n=83):** Patients in the pharmacist intervention group were given a 6-month intervention in phase two of the study, in which they received regular pharmacist follow-up and blister packs to aid with medication adherence. Additionally, patients received individualized education on BP meds + an assessment of medication compliance + proactive follow-up visits. **Systems Components:** Blister packs **Training of team members:** NR **Comparison (n=76):** Patients in this group received everything the intervention group received in phase one. However, in phase two, patients were not given the blister packs. They were given new pill bottles with a 90-day supply of drugs and 1 refill prescription.	**Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=76): 71.4 (10.6) Intervention (n=83): 71.7 (9.10) **12m:** Usual Care (n=62): 68.6 (10.5) Intervention (n=73): 67.5 (9.90) **Change in mean difference = -1.3** **Additional Outcomes:** LDL-C*+ medication adherence **Summary:** The pharmacy care intervention including military veterans taking 4 or more chronic disease medications was found to significantly reduce SBP, but not DBP. However, medication adherence and LDL-C levels were found to have significantly improved in the intervention group after the 14 month study period.
Authors: Levine et al. 2003 **Location** Sand-Town Winchester Community in Western Baltimore, MD **Setting and Scale:** Home outreach visits in Sand-Town Winchester Community which is 98% African American,	**Target Population (N= 2736):** African American residents of Sand-Town Winchester Community Urban with hypertension **Inclusion:** >18 yrs. old + reported history of hypertension or newly detected hypertension (≥140 SBP and/or ≥90 DBP) during baseline visit	**Team (Intensive Community Outreach):** **Team Member(s):** Experienced Community Health Worker (CHW) **PC Provider:** NR **Team Member Role for meds:** Only adherence support and information for current HT meds provided	**Change in SBP (mm Hg)** **Baseline: Mean (SE)** Usual care (n=391): 148.6 (NR) Intervention (n=371): 147.7 (NR) **40m [ITT]:** Usual care (n=391): NR (1.5) Intervention (n=371): NR (1.5) **Change in mean difference = +2.3** **Change in DBP (mm Hg)** **Baseline: Mean**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
63% female, with an average age of 43 years. Forty-two percent of residents have a high school diploma or GED, 31% are unemployed, and 51% have an annual income of <$10,000. **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Authors included those affiliated with Johns Hopkins University and members of the community advisory board **Funding:** NHLBI **Applicability:** From this study mainly to, Hypertensive African Americans living in a predominantly urban, low SES community **Limitations:** Interpretation of Results: Follow-up < 80%; possibility of contamination as the study was based in the community and there was potential to interact with others who participated in the study but got the opposite treatment.	**Exclusion:** Terminal condition + mental impairment + acute conditions precluding participation **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 53.8 yrs. Sex: Female: 61.2%; Male: 59.8% Race/Ethnicity: African American: 100% Education: Less than HS: 57.1%; Graduated HS: 40.6%; Post HS education: 2.3% High BMI: 42.0% (obese) Smoking: 48.1% **Reported co-morbidities [Intervention Arm]:** Alcohol/Substance abuse: 39.2% Hypercholesterolemia: 25.1%	**Team Interaction:** CHW did not interact with the participant's PCP throughout this study. Study notes that community health workers were supervised by a nurse **Practice and Patient Support Components (n= 387):** CHWs made 6 proactive home visits over a 30-month period to participants in the community. Visits included: education on hypertension and its treatment via an educational booklet + lifestyle counseling + self-management tool (wallet-sized card) to record dates and levels of BP + patient support via an educational pamphlet emphasizing self-care behaviors and CHW support to work on BP goals + supervision of CHWs by nurses + provision of information on gaining access to free ongoing care in the community+ family and friend support training + information on access to care, health insurance, and other system-related factors; + tailored messages to the individual's hypertension status, and to their health educational needs **Systems Components:** NR **Training of team members:** CHW received training over 3 months (not specified) **Comparison (n= 402):** Participants received a less intensive intervention which consisted of:1 home outreach visit by the CHW + patient education on	Usual care (n=391): 89.3 Intervention (n=371): 89.2 **40m [ITT]:** Usual care (n=391): 84.7 Intervention (n=371): 86.2 **Change in mean difference = +1.20** **Proportion Controlled** **Baseline:** Usual care (n=387): 18.0% Intervention (n=402): 16.0% **40m [ITT]:** Usual care (n=387): 34.0% Intervention (n=402): 36.0% **Absolute pct pt change = +4.0** **Additional Outcomes:** None **Summary:** Community health worker/nurse teams were effective in outreach, patient education, linking individuals to care, monitoring, and coordinating other important services necessary for adequate blood pressure control in African Americans living in a predominantly urban, low SES community. The more intensive intervention surprisingly had less favorable results compared with the less intensive group at 40 months. Though BP decreased in the more intensive group at 27 months below that of the less intensive group at 40 months, these levels rose for the more intensive intervention at 40 months indicating that the sustainability of the intervention requires more research.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	hypertension and its treatment via an educational booklet + self-management tool (wallet-sized card) to record dates and levels of BP + CHW supervision via study nurse + information on gaining access to free ongoing care in the community	See Previous
Authors: Litaker et al. 2003 **Location** Cleveland, OH **Setting and Scale:** 1 large tertiary teaching hospital seeing >30,000 patients annually **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Cleveland Clinic Foundation **Funding:** Arison Foundation + Cleveland Clinic Foundation **Applicability:** For this study, mainly to, older-adult African American women diagnosed with HTN and diabetes who seek care at a tertiary care hospital. **Limitations:** Description: Limited information on demographics and intervention details Interpretation of Results: Possible contamination due to physicians not being blinded;	**Target Population (N=1,717):** Patients from the metro Cleveland area diagnosed with mild or moderate HTN with non-insulin dependent diabetes mellitus **Inclusion:** Diabetes + HTN + those receiving their care at the time of study entry at the study site **Exclusion:** "Medically complex" individuals + those requiring 2 or more medications for blood pressure control **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 60.5 yrs. Sex: Female: 59.0%; Male: 41.0% Race/Ethnicity: Black/AA: 54.0%; Other (non-AA): 46.0% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 100%	**Team (NP-MD Team):** **Team Member(s):** Nurse practitioners **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Nurse practitioner and PCP were co-located; when management decisions or problems not addressed by the algorithms arose, the NP discussed them with the patient's primary care physician and a treatment plan was established. **Practice and Patient Support Components (n=79):** The 12 month nurse practitioner intervention on diabetes and HTN patients focused on chronic disease management and the use of clinical practice algorithms, patient education on disease self-management strategies, and regular monitoring and feedback delivered primarily by the nurse practitioner. Additionally, patients received a completed drug profile + assessment of medication compliance + a written treatment plan + lifestyle counseling + tracking response to treatment.	**Proportion Controlled (BP<130/85 mmHg):** **Baseline:** Usual care (n=78): 9.0% Intervention (n=79): 9.0% **12m [ITT]:** Usual Care (n=78): 10.0% Intervention (n=79): 11.0% **Absolute pct pt change = +1.0 [-8.60-10.60]** **Additional Outcomes:** Glycated Hb* + TC* + HDL* + Health-related QoL + quality of care (assessed through provider behaviors), health related quality of life, satisfaction with care, program costs, resource utilization **Summary:** For hypertensive and diabetic patients seen during this 12 month nurse practitioner/MD intervention, there were no significant differences observed in achieving nationally recognized treatment goals for blood pressure between the control and intervention group. Contrarily, the intervention significantly resulted in an increase in HDL-c level, a decrease in HbA1c levels, and improvements with care satisfaction.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Recruitment rate <20%	See Previous	**Systems Components:** Data collection system via new patient charts + telephone based support **Training of team members:** NP training preceded the study enrollment phase with instruction by the investigator team on rationale for and application of treatment algorithms to patient care. **Comparison (n=78):** Patients assigned to this group received usual care from their PCP. It should be noted that some of PCPs in the control group also saw patients from the intervention group.	See Previous
Authors: Ma et al. 2009 **Location** San Mateo County, CA **Setting and Scale:** 4 primary care clinics of the San Mateo Medical Center system **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** San Mateo Medical Center (The Stanford and San Mateo Heart to Heart Project) **Funding:** NHLBI + unspecified resources from VA and San Mateo Medical Center	**Target Population (N=419):** Adult patients at the San Mateo Medical Center with moderately to severely elevated levels of major modifiable CVD risk factor **Inclusion:** Between the ages of 35 and 85 + the patient has CAD or CAD risk equivalent (abdominal aortic aneurysm, peripheral vascular disease, transient ischemic attack, stroke, diabetes, or FBS ≥ 126 mg/dL × 2) + at least one of following: SBP ≥ 130 mm Hg, DBP ≥ 80 mm Hg, LDL ≥ 100 mg/dL, HDL ≤ 40 mg/dL, TG ≥ 150 mg/dL, FBS ≥ 126 mg/dL, BMI ≥ 30, or is a current smoker. **Exclusion:** Resident of long-term facility + lack of spoken English or Spanish + significant comorbidities + life expectancy limiting condition + psychiatric disorder + substance abuse + no means of	**<u>Team</u> (Nurse/Dietitian Case Management Group):** **Team Member(s):** Registered nurse + nurse practitioner + registered dietitian **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Team members and PCP were co-located; however, information on their interaction and communication was not provided. **Practice and Patient Support Components (n=212):** Patients received a nurse and dietitian case management intervention in which the team members and PCP aimed to reduce major CVD risk factors by offering	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=207):135.1 (20.2) Intervention (n=212): 132.7 (19.4) **15m:** Usual Care (n=170): NR Intervention (n=170): NR **Change in mean difference = -6.80** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=207): 79.6 (10.1) Intervention (n=212): 79.6 (10.6) **15m:** Usual Care (n=170): NR Intervention (n=170): NR **Change in mean difference = -3.00** **Proportion Controlled (BP<140/90mm Hg or < 130/80 mm Hg with diabetes)** **Baseline:** Usual care (n=170): 17.7% Intervention (n=170): 18.2%

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: For this study, mainly to, low-income, ethnically diverse patients at elevated risk for a CVD event receiving public health insurance. **Limitations:** Interpretation of results- Possible confounding for health behavior and lifestyle changes due to the intervention group having a higher education level	contacting patient + family household member already enrolled + homeless + difficulty coming to appointments + already participating in the diabetes program + pregnant or intends to get pregnant the next 3 years **Reported Baseline Demographics:** Age (mean): 54.4 yrs. Sex: Female: 64.6%; Male: 35.4% Race/Ethnicity: Black/AA: 9.90%; Asian: 11.3%; Hispanic: 63.2% Education: <H.S.: 50.7% Low income: 100% Insurance: Medicare/Medicaid: 100% BMI Men (mean): 33.1 (obese) BMI Women (mean): 35.2 (obese) Smoking: 16.0% **Reported Co-morbidities:** Diabetes: 64.2%	guideline-based tailored lifestyle and behavioral counseling + completed drug profiles + assessing medication compliance + 30-60 minute follow-up visits + tracking response to treatment + self-mgt. training via use of community resources **Systems Components:** Telephone consultation were also available as required **Training of team members:** Case managers were trained and supervised by a senior nurse practitioner and a physician. **Comparison (n=207):** Patients received usual care from their PCPs and a letter outlining the CHD risk reduction goals recommended in the latest national guidelines.	**15m No diabetes [observed]:** Usual Care (n=52): 38.5% Intervention (n=53): 69.8% **Absolute pct pt change = +31.3** **15m with diabetes [observed]:** Usual Care (n=88):22.7% Intervention (n=86): 41.9% **Absolute pct pt change = +19.2** **15m[ITT arms collapsed]:** Usual care (n=170):38.6 Intervention (n=170): 56.5 **Absolute pct pt change = +17.4 [7.00-27.8]** **Absolute pct pt change = +17.4** **Additional Outcomes:** Change in TC* + HDL* + LDL* + TG* + Framingham cardiovascular risk assessment score + A1c levels + FBS*+ BMI+ Waist circumference at 15 months **Summary:** The 15 month nurse/dietitian case management intervention for low-income patients receiving public health insurance and at an elevated risk for a CVD event was able to significantly reduce SBP and DBP. Furthermore, there were non-significant improvements favoring the intervention group for LDL-C, HDL-C, and HbA1c compared to the usual care group; however, changes in triglycerides worsened for the intervention group.
Authors: Magid et al. 2011 **Location** Denver, CO **Setting and Scale:** 3 healthcare systems including: Denver Health and Hospitals; Veterans Affairs Eastern Colorado Healthcare System serving 60,000+ veterans	**Target Population (n=1548):** Patients with uncontrolled hypertension **Inclusion:** Uncontrolled BP (>140 SBP or >90 DBP; or >130 SBP or >80 DBP for persons with diabetes or chronic kidney disease) + on ≤4 anti-hypertensive medications + receives care at one of 3 health systems included in the study	**Team (Pharmacist + Home BP monitoring):** **Team Member(s):** Clinical Pharmacist **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:**	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=145): 143.8 (16.8) Intervention (n=138): 150.5 (19.5) **6m:** Usual care (n=145): 136.7 (17.0) Intervention (n=138): 137.4 (19.4) **Change in mean difference = -6.0** **Change in DBP (mm Hg):** **Baseline: Mean (SD)**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
through its medical center in Denver and 8 outpatient clinics located throughout eastern CO; and Kaiser Permanente serving more than 500,000 patients in the Denver-Boulder–Colorado Springs metro areas through 2 contract hospitals and 20 outpatient clinics. **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Denver Health and Hospitals + the VA + Kaiser **Funding:** American Heart Association + Colorado Department of Public Health and Environment + VA System **Applicability:** From this study, mainly to older white males with a history of hypertension attending integrated healthcare settings serving diverse patient populations **Limitations:** Interpretation of Results: Follow-up < 80% in intervention group; baseline groups not comparable at baseline	**Exclusion:** Patients with average BP below the cutoffs **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 65.1 yrs. Sex: Female: 33.0%; Male: 67.0% Race/Ethnicity: White: 65.9.0%; Hispanic: 18.1%; Not reported: 16.0% Education: Less than high school: 21.7% **Reported co-morbidities:** Diabetes: 52.2% Smoking: 13.0% History of hypertension: 100%	All communication between the pharmacist and the physicians occurred via EMR notes or by telephone. **Practice and Patient Support Components (n= 138):** Patients received standard medical care from clinical pharmacists. The intervention consisted of: completion of a drug profile + assessing medication adherence + use of a treatment algorithm based on pre-approved protocols + patient education on hypertension using an NIH booklet + weekly reporting of BP values by patients via an IVR phone system + tracking response to treatment via IVR system data + proactive follow-up via telephone contacts as needed + training on electronic BP cuff use, home monitoring and IVR system + self-management support via electronic BP cuffs and IVR system giving feedback on BP values and associated education problems **Systems Components:** EMRs + IVR system + Relay of clinical data using the IVR + electronic BP cuffs + telephone system for communication **Training of team members:** NR **Comparison (n= 145):** Patients received care as usual at one of the three healthcare systems.	Usual care (n=145): 85.3 (11.1) Intervention (n=138): 89.4 (13.6) **6m:** Usual care (n=145): 81.1 (11.7) Intervention (n=138):82.9 (12.9) **Change in mean difference = -2.3** **Proportion Controlled (<140/90 or <130/80 for diabetics):** **Baseline:** Usual care (n=164): 0% Intervention (n=174): 0% **6m [observed]:** Usual care (n=145): 35.2% Intervention (n=138): 36.0% **Absolute pct. pt. change = +0.8** **6m [ITT]** Usual care (n=164): 31.1% Intervention (n=174): 28.7% **Absolute pct. pt. change = -2.40** **Additional Outcomes:** # of hypertensive meds + intensity of hypertension regimen + medication adherence **Summary:** The addition of a multifaceted intervention composed of patient education, home BP monitoring, reporting BP measurements to an IVR system, and clinical pharmacist management of hypertension led to greater BP reductions among patients with uncontrolled hypertension in older male patients with a history of hypertension receiving care from integrated healthcare settings serving diverse patient populations. However, a greater proportion of the comparison group had their BP controlled at 6 months based on ITT analyses compared to the intervention group.
Authors: Marquez et al. 2005 **Location** Spain	**Target Population (N=636):** Patients who are newly diagnosed with HTN or uncontrolled mild to moderate hypertensive patients.	**Team (Telephone Intervention Group):** **Team Member(s):** 2 expert registered nurses	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=182): 159.2 (13.5) Intervention (n=184): 165.9 (10.6)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Setting and Scale: 85 primary care clinics with 128 investigators (5 patients each) **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Author affiliated with Orden Health Center (Spain) **Funding:** Astra Zeneca Spain **Applicability:** From this study, mainly to, older Spanish women with uncontrolled HTN receiving standard medication therapy. **Limitations:** Description: Race/ethnicity and SES data not provided; Sampling: Recruitment methodology not reported; Interpretation of results: Hawthorne effect; contamination of the control group	**Inclusion:** 18 to 80 years old + newly diagnosed or uncontrolled Phase I and II HTN requiring antihypertensive treatment + provision of patient informed consent in writing **Exclusion:** Patients requiring 2 or more antihypertensive drugs + acute MI + secondary hypertension + known side-effects to angiotensin inhibitors + pregnant or breastfeeding women + cohabitation with another person taking the same antihypertensive medication + any medical condition that will impact the study + patients planning to donate blood + participants in other research studies **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 61.7 yrs. Sex: Female: 51.6%; Male: 48.4% **Reported Co-morbidities:** NR	**PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Co-location and interaction between team members and PCP was not reported. **Practice and Patient Support Components (n=184):** Patients received telephone calls from expert nurses in between follow-up visits reinforcing compliance and reminding patients of scheduled appointment visits. The 6-month intervention consisted of: assessment of medication compliance + proactive follow-up phone calls + tracking response to treatment + reminder phone call to take medications. **Systems Components:** System support via telephone **Training of team members:** NR **Comparison (n=182):** Patients received the centers' routine primary care intervention; however, patients in both groups received the same medication therapy treatment plan.	**6m:** Usual Care (n=182): 137.1 (9.40) Intervention (n=184): 134.3 (14.3) **Change in mean difference = -9.5** **Change in DBP (mm Hg): Mean (SD)** **Baseline:** Usual care (n=182): 96.8 (9.10) Intervention (n=184): 99.5 (46.4) **6m:** Usual Care (n=182): 84.1 (10.4) Intervention (n=184): 79.7 (8.7) **Change in mean difference = -7.1** **Proportion Controlled (SBP< 140 mm Hg)** **Baseline:** Usual care (n=182): 0% Intervention (n=184): 0% **6m [observed]:** Usual Care (n=182): 53.9% Intervention (n=184): 66.1% **Absolute pct pt change = +12.2** **Proportion Controlled (DBP< 90 mm Hg)** **Baseline:** Usual care (n=182): 0% Intervention (n=184): 0% **6m [observed]:** Usual Care (n=182): 77.2% Intervention (n=184): 91.1% **Absolute pct pt change= +13.9** **6m [ITT]: BP < 140/90 mm Hg** Usual Care (n=182): 47.2% Intervention (n=184): 63.3% **Absolute pct pt change =+16.1[6.00, 26.2]** **Additional Outcomes:** Medication compliance **Summary:** The telephone intervention performed by an expert registered nurse was found to

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	See Previous	significantly reduce SBP and DBP level in Spanish patients newly diagnosed with HTN or patients suffering from uncontrolled HTN; as well as significantly improving BP control rates. Likewise, significant reductions in SBP and DBP levels and improvements in BP control rates were observed for the comparison group as well. Medication compliance, however, was greatest in the telephone intervention group.
Authors: McLean et al. 2008 **Location** Edmonton, Alberta, Canada **Setting and Scale:** 14 community pharmacies included in the Medicine Shoppe Pharmacies in Edmonton, Alberta, Canada. No further information on the scale is provided **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Medicine Shoppe Pharmacies, authors affiliated with University of Alberta **Funding:** Canadian Diabetes Association + Heart and Stroke Foundation of Canada + Canadian Council of Cardiovascular Nurses + Alberta Heritage Foundation for Medical Research + Merck Frosst Canada Ltd + ManthaMed **Applicability:** From this study, mainly to adult	**Target Population (n= 487):** Patients with diabetes and high blood pressure **Inclusion:** Type I or II diabetes identified through diabetes indicator medications in each pharmacy's database + BP higher than 130/80 mm Hg identified on 2 screening visits separated by 2 weeks **Exclusion:** Those with corticosteroid-induced or gestational diabetes + currently enrolled in other diabetes or hypertension trials + institutionalized + had medications administered by a professional caregiver + refused consent + declined attendance at follow-up visits for BP medications **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 66.2 yrs. Sex: Female: 34.8%; Male: 65.2% BMI (mean): 31.7 (obese) **Reported co-morbidities [Intervention Arm]:** Diabetes: 100.0% Current Smoker: 9.6% Hypercholesterolemia: 55.7%	**Team (Pharmacist Nurse Teams):** **Team Member(s):** Nurses with the education and skills to practice at an advanced level + Pharmacists **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Pharmacist-nurse team sent a 2-page fax after each follow-up visit to all patients' PCP documenting treatment recommendations, modifiable and non-modifiable risk factors, current medication and BP, and any suggestions for further testing or management and education on diabetes management **Practice and Patient Support Components (n= 115):** The intervention was delivered by pharmacist-nurse teams at various pharmacy sites and included: Drug profile completed + treatment algorithm via CHEP guidelines + hypertension education pamphlet given to patients + lifestyle counseling + proactive follow-up visits every 6 weeks + tracking response to treatment +web-based	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=112): 139.9 (11.9) Intervention (n=115): 142.5 (15.5) **6m [ITT]:** Usual care (n=112): NR Intervention (n=115): NR **Change in mean difference = -5.6** **BP Proportion Controlled (BP<130/80 mm Hg)** **Baseline:** Usual care (n=112): 3.6% Intervention (n=115): 2.6% **6m [ITT]:** Usual care (n=112): 33.0 % Intervention (n=115): 47.0 % **Absolute pct pt change = +15** **Additional Outcomes:** Prescribing trends + medication changes + change in SBP for patients with SBP >160 **Summary:** This study provides strong evidence that a community pharmacist and nurse team, working collaboratively with patients and primary care physicians, can have a major effect on hypertension management in patients with diabetes mellitus and suboptimal BP control in the community.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
patients with diabetes receiving care from 1 of 14 community pharmacies who are predominantly older (66years), male, and with a previous history of a CVD event. **Limitations:** Description: No race/ethnicity or SES data given Interpretation: Groups not comparable at baseline	See Previous	educational modules on hypertension and diabetes + self-management tool via wallet sized cards with BP measures and patient reminders **Systems Components:** fax machine **Training of team members:** Pharmacists attended a workshop, which included didactic and case-based materials as well as the study protocol and training in the use of BP monitors **Comparison (n=112):** Patients in the usual care group received a BP wallet card with recorded BP measures and a pamphlet on diabetes. Patients were invited to participate in the intervention at study end.	See Previous
Authors: Morgado et al. 2010 **Location** Portugal **Setting and Scale:** 1 hypertension/dyslipidemia hospital clinic **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Hospital Center of Cova de Beira + author affiliated with University of Beira Interior **Funding:** Foundation for Science and Technology (Portugal)	**Target Population (N=222):** Patients attending the hypertensive/dyslipidemia clinic for routine follow-up **Inclusion:** ≥18 years old + established medical diagnosis of arterial hypertension + on established antihypertensive drug treatment for at least 6 months **Exclusion:** Dementia + pregnancy + breastfeeding **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 58.3 yrs. Sex: Females: 55.1%; Males: 44.9% Education: <H.S.: 78.6%; H.S. grad: 10.2%; >H.S.: 6.10% BMI (mean): 29.8 (overweight) Smoking: 9.20%	**Team (Clinical Pharmacist Collaboration):** **Team Member(s):** Pharmacist **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Clinical pharmacist and PCP were co-located; recommendations for drug therapy changes were presented to PCP for approval. **Practice and Patient Support Components (n=98):** Patients were scheduled to see a clinical pharmacist to manage their hypertension based on JNC-VII guidelines. During these visits, the pharmacist provided education on	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=99): 141.9 (16.8) Intervention (n=98): 141.6 (16.3) **9m [ITT]** Usual Care (n=99): 141.0 (18.0) Intervention (n=98): 134.2 (16.0) **Change in mean difference = -6.50** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=99): 86.4 (11.7) Intervention (n=98): 85.2 (10.2) **9m [ITT]:** Usual Care (n=99): 85.4 (8.90) Intervention (n=98): 82.5 (8.60) **Change in mean difference = -1.70** **Proportion Controlled (BP< 140/90 mm Hg or BP<130/80 mm Hg in diabetics)** **Baseline:**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: For this study, mainly to, middle-aged, overweight, hypertensive women in Portugal with limited secondary school education. **Limitations:** Interpretation of results- Groups not comparable at baseline + potential for contamination of control group	**Reported Co-morbidities [Intervention Arm]:** Diabetes: 18.4% Hypercholesterolemia: 79.6%	HTN and antihypertensive meds + lifestyle education and counseling + completed a drug profile + assessed medication compliance + proactive follow-up at 3 and 6 months + recommendations on self-management of HTN via an adherence plan. **Systems Components:** EMRs/EHRs (pre-existing) **Training of team members:** NR **Comparison (n=99):** Patients continued to receive traditional services provided by the hospital clinic and did not receive any care from the clinical pharmacist.	Usual care (n=99): 35.4% Intervention (n=98): 30.6% **9m[ITT]:** Usual Care (n=99): 43.4% Intervention (n=98): 63.3% **Absolute pct pt change = +24.7** **Additional Outcomes:** medication adherence + types of antihypertensive meds + knowledge of target BP values + knowledge of hypertension risks + BMI **Summary:** For middle-age, hypertensive, women living in Portugal, the 9-month pharmacist intervention program was found to significantly lower SBP and DBP compared to the usual care group. Moreover, BP control and medication adherence were higher in the pharmacist intervention group than the usual care group.
Authors: Murray et al. 2004 **Location** Indianapolis, IN **Setting and Scale:** 1 academic internal medicine practice with 150 general faculty internists and 13,000 patients with >50,000 visits annually; + 1 hospital-based outpatient pharmacy **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Indiana University School of Medicine	**Target Population (N=1036):** Patients with uncomplicated hypertension who had scheduled appointments at the primary care clinic. **Inclusion:** Evidence of HTN as an active diagnosis in patients' EMR records; or all of the following: SBP ≥140 mm Hg + at least two DBP measurement ≥90 mm Hg + a prescription for at least one antihypertensive agent; + English speaking + access to working telephone **Exclusion:** Evidence of the presence of cardiovascular complications (i.e., CAS, MI, stroke, heart failure, or renal insufficiency) **Reported Baseline Demographics Arm 1:**	**Team (Decision support groups):** **Team Member(s):** 11 full-time pharmacists**[both intervention arms]** **PC Provider:** Resident physicians +faculty physicians +fellows **[both intervention arms]** **Team Member Role for meds:** Changes to medications can be made with PCP approval/consultation **[both intervention arms]** **Team Interaction:** Physician and pharmacist were co-located; Pharmacists could contact the PCP either by page, telephone, or email to make therapy recommendations **[both intervention arms]**	**Change in SBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=124): 142.0 (16.0) Intervention (n=129): 143.0 (17.0) **12m:** Usual Care (n=124): 143.0 (18.0) Intervention (n=129): 142.0 (23.0) **Change in mean difference = -2.0** **Baseline Arm 2: Mean (SD)** Usual care (n=124): 142.0 (16.0) Intervention (n=128): 144.0 (18.0) **12m:** Usual Care (n=124): 143.0 (18.0) Intervention (n=129): 144.0 (21.0) **Change in mean difference = -1.0** **Change in DBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=124):78.0 (10.0) Intervention (n=128): 76.0 (11.0) **12m:**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Funding: AHRQ **Applicability:** For this study, mainly to, hypertensive middle-aged AA women with little to no post-secondary education living in an urban city. **Limitations:** Description: Unclear description of control arm Interpretation of results: Follow-up <80% for pharmacy group; bias of control group due to receipt of educational materials	Age (mean): 54.0 yrs. Sex: Females: 81.0%; Males 19.0% Race/Ethnicity: Black/AA: 58.0%; Other: 42.0% Education: 11.0 yrs. (mean) **Reported Baseline Demographics Arm 2:** Age (mean): 54.0 yrs. Sex: Females: 79.0%; Males 21.0% Race/Ethnicity: Black/AA: 61.0%; Other: 39.0% Education: 10.0 yrs. (mean) **Reported Co-morbidities:** NR	**Practice and Patient Support Components** **Arm 1 [Physician & pharmacist decision support] (n=129):** Physicians entered patient data into an EMR workstation during each visit, and the system generated care suggestions for HTN treatment. Pharmacist provided drug counseling to patients as identified by prescription data entered into the EMR, and patients received the following: education on BP meds + completed drug profile + guideline-based decision support tool + lifestyle counseling + pharmacist reminders + guideline training + tailored treatment suggestions **Arm 2 [Pharmacist decision support] (n=128):** During a prescription refill, pharmacists were notified of which action plan they should take based on the prescription data entered. Based on the suggestion, pharmacist had the option to: fill the prescription, provide counseling, or contact the PCP. Additionally, patients in this group received the same interventions as those listed for arm 1. **Systems Components:** EMRs/EHRs + clinical decision support system **[both intervention arms]** **Training of team members:** Physician and pharmacist met once a week with study investigator to review guidelines and study rationale [both intervention arms]	Usual Care (n=124): 78.0 (11.0) Intervention (n=129): 77.0 (14.0) **Change in mean difference = +1.0** **Baseline Arm 2: Mean (SD)** Usual care (n=124): 78.0 (10.0) Intervention (n=128): 78.0 (10.0) **12m:** Usual Care (n=124): 78.0 (11.0) Intervention (n=128): 77.0 (11.0) **Change in mean difference = -1.0** **Additional Outcomes:** HRQL + symptom and side-effect profiles + ER and hospitalization visits (all cause + CVD related) + drug therapy compliance + direct healthcare charges + patient satisfaction with physician and pharmacists **Summary:** Little change was observed in systolic and diastolic BP within the last 6 months of intervention across groups. Diastolic BP actually increased in the pharmacist-physician intervention. Overall, compliance with all treatment suggestions was not statistically significant across groups. The intervention had little effect on secondary outcomes examined for this study; thus, indicating that computer-based interventions using clinical decision support failed to improve compliance among patients with uncomplicated hypertension.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Comparison (n=124):** Control physicians and pharmacists did not receive suggested treatment guidelines on their computer workstations; computer system withheld care suggestions.	See Previous
Authors: New et al. 2004 **Location** Salford, UK **Setting and Scale:** 44 practices with an average number of general practitioners per clinic = 3.8 and the average # patients per clinic = 5,178 **Design:** RCT (cluster) **Quality of Execution:** Fair (4 limitations) **Organization(s):** Primary author affiliated with the Dept. of Diabetes at Hope Hospital in Salford, UK **Funding:** Pfizer **Applicability:** From this study mainly to British citizens diagnosed with diabetes with uncontrolled hypertension or hyperlipidemia and who visited a GP on a regular basis. **Limitations:** Description: No information on race, gender, SES Sampling: inclusion/exclusion criteria not clearly defined Data Analysis: No reporting of baseline values for the control	**Target Population (N=NR):** Patients with diabetes being treated by a primary care or secondary care provider **Inclusion:** Patients in the forty-four participating clinics who failed to achieve either control of hypertension or lipids. **Exclusion:** NR **Reported Baseline Demographics:** NR **Reported co-morbidities [Intervention Arm]:** Diabetes: 100%	**Team (Educational outreach group):** **Team Member(s):** Specialist nurse (provided the intervention to the practice nurse); Practice nurse (pre-existing) **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** The specialist nurse initially visited each practice to explain intervention targets, measurement methods and work through case examples. The specialist nurse visits every three months to provide support and encouragement for the practice nurse and GP to continue intervening as patients returned for annual reviews. **Practice and Patient Support Components (n= 2474):** Specialist nurses provided outreach visits with all practices and provided training to all providers at the practice. Providers were then responsible for all care which consisted of: use of treatment algorithm based on local guidelines for treatment of hypertension + lifestyle counseling to improve metabolic control + tracking response to treatment every 4-6 weeks + provider reminders of	**Proportion Controlled (BP<140/80 mm Hg)** **Baseline:** Usual care (n=NR): 0% Intervention (n=NR): 0% **12m:** Usual Care (n=2531): 47.9% Intervention (n=2474): 48.2% **Absolute pct pt change = +0.3** **OR [95% CI] = 1.01 [0.8, 1.3]** **Additional Outcomes:** Lipids proportion control* **Summary:** This study demonstrates that educational outreach in primary care did not help achieve pre-defined targets for control of hypertension or hyperlipidemia in patients with diabetes. Limitations of this study and the similarities between the services provided to intervention and comparison groups should be taken into consideration.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
and intervention group Interpretation of Results: Possible contamination because the intervention group received a similar intervention to the control group	See Previous	guidelines via laminated flowchart + provider feedback and support in the form of Specialist Nurse visits to the clinics every three months **Systems Components:** NR **Training of team members:** The specialist nurse met with practices to explain intervention targets, measurement methods and work through case examples. **Comparison (n= 2531):** Patients received care as usual for hypertension but received an intervention for hyperlipidemia similar to the hypertension intervention provided to the intervention group.	See Previous
Authors: New et al. 2003 **Location** Salford, UK **Setting and Scale:** 1 hospital with a district-wide electronic registry for diabetes containing 5872 patients with 3365 (57%) also receiving shared care at the hospital (care shared with GP and an annual review at the hospital) **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Hope Hospital, Salford, UK **Funding:** Pfizer	**Target Population (n= 1407):** Patients with diabetes and high blood pressure registered for shared care at the study hospital **Inclusion:** SBP > 140mm Hg + DBP >80 mm Hg or Cholesterol > 5 mmol/L. **Exclusion:** NR **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 63.5 yrs. Sex: Female: 49.0%; Male: 51.0% High BMI: 30.7 (obese) **Reported co-morbidities [Intervention Arm]:** Diabetes: 100.0%	**Team (Nurse-led clinics):** **Team Member(s):** RN **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Nurse specialists contacted PCP when additional meds were needed. Mode of communication was not reported **Practice and Patient Support Components (n= 506):** Patients received usual care plus a nurse led intervention focusing on hypertension which included: education on BP meds + drug profile completed + adherence plan developed via reinforcement at subsequent visits + use of treatment algorithm based on	**Change in SBP (mm Hg)** **Baseline: Mean** Usual care (n=508): 159.0 Intervention (n=506): 159.0 **12m [ITT]:** Usual care (n=508): 149.0 Intervention (n=506): 147.0 **Change in mean difference = -1.95** **Change in DBP (mm Hg)** **Baseline: Mean** Usual care (n=508): 77.0 Intervention (n=506): 78.0 **12m [ITT]** Usual care (n=508): 74.0 Intervention (n=506): 74.0 **Change in mean difference= +0.79** **Proportion Controlled (BP< 140/80 mm Hg) :** **Baseline:** Usual care (n=508): 0% Intervention (n=506): 0% **12m [ITT]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Applicability: From this study, mainly to inner-city UK settings - obese, adult, diabetic populations who are part of a diabetes registry with access to shared type of care for diabetes where they can also have access to nurse-led clinics for hypertension or cholesterol management. **Limitations:** Description: Race/ethnicity OR SES information not provided Sampling: Sampling frame poorly described plus exclusion criteria not reported	See Previous	guidelines also available in usual care, district policy for hypertension, and cholesterol management + education plan for hypertension + lifestyle counseling + proactive follow-up visits every 4-6 weeks for 30-45 min + monthly education sessions on management guidelines for nurses + nurse developed an individualized action plan for glycemic control which was shared with the patient and PCP **Systems Components (both arms):** Electronic Diabetes Registry System **Training of team members:** Training was provided by the local clinicians and pharmacists though not specified **Comparison (n= 508):** Patients received care as usual in addition to: district policy for hypertension and cholesterol management + monthly education sessions on management guidelines for providers + shared diabetes care + action plan developed and shared with the patient and their GP	Usual care (n=508): 24.1% Intervention (n=506): 26.6% **Absolute pct pt change = +42.5** **OR [95%CI] = 1.14 [0.86, 1.51]** **Additional Outcomes:** Total cholesterol* + cholesterol control* + mortality **Summary:** Specialist nurse–led clinics can improve the achievement of hypertension targets when added to care routinely provided by the diabetes clinic in adult obese persons with diabetes
Authors: Ogedegbe et al. 2008 **Location** New York, NY **Setting and Scale:** 2 community-based primary care practices primarily serving the poor **Design:** RCT **Quality of Execution:** Fair (2 limitations)	**Target Population (N=529):** Patients from two community-based ambulatory care network primary care centers diagnosed with HTN. **Inclusion:** Self-identification as African American + ≥18 years old + HTN diagnoses via ICD-9 codes 401-401.9 + taking at least one anti-hypertensive medication + uncontrolled HTN on two successive clinic visits prior to screening + English speaking	**Team (MINT counseling group):** **Team Member(s):** Research Assistants **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Co-location and interaction between team members and PCP not reported.	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=95): 141.9 Intervention (n=95): 144.2 **12m [ITT]:** Usual Care (n=95): 136.8 Intervention (n=95): 133.0 **Change in mean difference = -6.1** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=95): 86.3 Intervention (n=95): 86.0 **12m [ITT]:**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Organization(s): NY Presbyterian Ambulatory Network (ACN) **Funding:** NHLBI + NIH **Applicability:** For this study, mainly to, hypertensive, low-income, African American women who seek care from community-based primary care health centers. **Limitations:** Data analysis: Analytic methods describing ITT analyses and attrition rate unclear Interpretation of results: < 80% of participants had data for baseline and 12 months reported for BP outcomes	**Exclusion:** Diagnosis of cognitive impairment or serious medical condition per PCP **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 53.5 yrs. Sex: Female: 88.4%; Male:11.6% Race/Ethnicity: Black/AA: 100% Education: <H.S.: 22.1%; H.S. grad: 43.1%; >H.S.: 34.7% Low income: 61.1% (<$20,000) Insurance: Insured: 11.6%; Medicare/Medicaid: 80.0% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 32.6%	**Practice and Patient Support Components (n=95):** Patients received four structured adherence interview counseling sessions given by research assistants over a 12 month period. Additionally, patients were given 2 weeks appointment reminders + compensation for completing data collection visit + feedback provided to research assistants on performance. **Systems Components:** EMRs/EHRs + data collection system via MEMS device **Training of team members:** The RAs attended 2 training sessions lasting 8 hours each in the first year of the study followed by a 1 day booster for each subsequent year. **Comparison (n=95):** Patients received care as usual + tip sheets to refill MEMS bottles + compensation for completing data collection visits.	Usual Care (n=95): 82.82 Intervention (n=95): 81.10 **Change in mean difference = -1.4** **Additional Outcomes:** Medication adherence **Summary:** The MINT counseling intervention on ambulatory hypertensive patients resulted in non-significant reductions in both SBP and DBP after 12 months. However, the intervention group was found to have significantly higher medication adherence rates compared to the usual care group.
Authors: Park et al. 2009 **Location** South Korea **Setting and Scale:** 1 family medicine outpatient hospital clinic with 800 beds + patients entered data and received recommendations via a website and their cellphones **Design:** Quasi-experimental	**Target Population (N= NR):** "Obese" patients with HTN who visited the family medicine outpatient dept. of a tertiary care hospital in an urban city of south Korea **Inclusion:** Hypertension (>120/80 mmHg) + overweight/obese (BMI >23 kg/m^2) + attended family medicine outpatient hospital clinic + able to measure own BP, take meds, and input data into a website + own a cellphone	**Team (SMS/Internet intervention group):** **Team Member(s):** 1 Doctorate level nurse practitioner + 1 nurse professor **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Co-location was not reported; however, team members met to discuss optimal recommendations	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=21): 133.9 (9.3) Intervention (n=28): 135.7 (8.8) **2m:** Usual Care (n=21): 136.7 (9.1) Intervention (n=28): 126.6 (8.7) **Change in mean difference = -11.9** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=21): 91.0 (9.9) Intervention (n=28): 90.4 (6.7) **2m:** Usual Care (n=21): 91.4 (8.7)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Quality of Execution: Limited (5 limitations) **Organization(s):** Catholic University Medical Center, Seoul, South Korea **Funding:** NR **Applicability:** For this study, mainly to, middle-aged overweight populations with a history of HTN with access to internet and a cellphone. **Limitations:** Description: Race/ethnicity, SES was not reported Sampling: Sampling frame not provided; Interpretation: convenience sample + groups not comparable at baseline + power requirements not met for control group	**Exclusion:** Secondary HTN + alcoholism + renal insufficiency w/ creatinine level of >1.5 mg/dL + changing of meds during intervention period **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 53.2 yrs. Sex: Females: 39.3%; Males: 60.7% BMI (mean): 25.5 (overweight) **Reported Co-morbidities:** NR	for each patient + medication adjustments were communicated to the PCP **Practice and Patient Support Components (n=30):** Patient entered self-monitored BP, BP medication usage, and body weight through a website or cellphone on a weekly basis for 2 months. Based on the data received, recommendations and medication titrations were made accordingly by team members. Patients received the following from team members: education on BP meds + lifestyle counseling + tracking response to treatment + tailored treatment recommendations **Systems Components:** EMRs/EHRs + relay of clinical data via website and cell phone + recommendations via SMS + internet **Training of team members:** NR **Comparison (n=25):** The control group did not have access to the website and did not receive treatment recommendations They were however made aware that the study was taking place. Patients were required to visit the hospital after 8 weeks.	Intervention (n=28): 83.2 (7.1) **Change in mean difference = -7.60** **Additional Outcomes:** Triglycerides* +TC* + HDL-C* + LDL-C* + body weight + waist circumference **Summary:** There was a significant decrease in SBP and DBP for the intervention group, but not for the control group after 2 months in overweight patients with a history of HTN. Additionally, HDL-C increased significantly in the intervention group, but not in the control group. Changes were not significant for TC, TG, and LDL-C. Also, significant improvements for body weight and waist circumference were noted for the intervention group, with significant increases observed for the control group.
Authors: Pezzin et al. 2010 **Location** New York, NY **Setting and Scale:** Urban, non-profit Medicare certified home health	**Target Population (N=2600):** High-risk African Americans with hypertension receiving home health services **Inclusion:** African American + English-speaking + ages 21 to 80 + uncontrolled HTN + BP	**Team (Augmented intervention):** **Team Member(s):** home care nurse + "HTN support" nurse + health educator **PC Provider:** Physician	**Change in SBP (mmHg): Mean (SD)** **Baseline** Usual care (n=217): 156.1 (20.2) Intervention (n=221):154.3 (20.1) **3 months:** Usual Care (n=217): 151.6 Intervention (n=221): 147.8 **mean difference = -2.0**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
organization + 2,000 nurses + 10,000 patients **Design:** Cluster RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Authors affiliated with Visiting Nurse Service + Medical College of Wisconsin + Weill Cornell Medical College **Funding:** NHLBI **Applicability:** From this study, mainly to older, low-income African American women with stage 2 hypertension along with other co-morbidities (e.g., diabetes) receiving home health services **Limitations:** Description: Study uses term "post-acute" for population but unclear what this means. Interpretation of results: follow-up < 80%	at recruitment of ≥140/90 mmHg (≥130/80 mmHg for diabetics) **Exclusion:** Patients with kidney transplant + end-stage renal disease + severe heart failure + dementia + organic brain disorder + other cognitive impairments + those on dialysis + patients whose baseline BP reading could not be obtained due to arm size **Reported Baseline Demographics:** Age (mean): 64.2 yrs. old Sex: Male: 30.0%; Female: 70.0% Race/Ethnicity: African American: 100% Insurance: Medicaid: 44.0% **Reported Co-morbidities:** Diabetes: 60.0%	**Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** PCP and nurses were not co-located; however, HTN support nurses and home care nurses were co-located, i.e. they both visited patients' homes and communicated frequently [both groups]. PCP was communicated with when changes to medications needed to be considered **Practice and Patient Support Components (n=221):** Patients in intervention group received intervention at home which included: education on BP management + self-management tools via home BP monitor and BP log + lifestyle counseling + adherence plan + medication review + tracking response to treatment + proactive patient follow-up + provider education via provision of JNC-7 guidelines **Systems Components:** Home BP monitor + other systems support (email) **Training of team members:** Nurses in the basic intervention group received nurse-specific practices required to support JNC-7 + information on the "5A model" for promoting patient self-management HTN support nurses and health educator received protocols to help strengthen patient self-management skills + adhere to medication recommendations + communicate effectively	**Change in DBP (mmHg): Mean (SD)** **Baseline:** Usual care (n=217): 88.1 (16.0) Intervention (n=221): 86.8 (12.2) **3 months:** Usual Care (n=217): 84.6 Intervention (n=221): 83.3 **mean difference = 0** **Proportion Controlled (BP140/90<mmHg):** **Baseline:** Usual care (n=217): 0 Intervention (n=221): 0 **3 months:** Usual Care (n=217): 20.7% Intervention (n=221): 25.2% **Absolute pct. pt. change= +4.5 pct pts** **Additional Outcomes:** NA **Summary:** The hypertension support, nurse-led intervention slightly improved the proportion of patients with controlled BP in a group of high-risk, low income African-Americans receiving home healthcare compared to usual home health care during a 3 month period. However, for the overall intervention population, BP outcomes improved, but the improvements were not significant.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
		Comparison (n=217): Patients in the comparison group received usual care consisting of home health visits from a nurse delivering a uniform clinical and functional assessment; a plan of care + patient education + monitoring + tailored hands-on care	
Authors: Planas et al. 2009 **Location** Tulsa, OK **Setting and Scale:** 5 regional chain community pharmacies employing 11 pharmacists **Design:** RCT **Quality of Execution:** Limited (5 limitations) **Organization(s):** Large regional pharmacy chain (unspecified) **Funding:** American Pharmacists Association Foundation + American Society of Health-System Pharmacists Foundation + USA Drug Stores **Applicability:** For this study, mainly to, older white women with diabetes and HTN who are enrolled in a managed care organization. **Limitations:** Description: Control group details not given Sampling: Sample size <20 in the intervention group	**Target Population (N=872):** Members of a managed care organization who took part in a larger diabetes management study **Inclusion:** ≥18 years old + BP ≥130/80 mmHg +currently on antihypertensive meds + HbA1c level >7.0% within the last 6m + able and willing to come to periodic visits during a 9m period. **Exclusion:** Pregnancy + enrollment in another diabetes program + not enrolled in the MCO included in the study **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 64.2 yrs. Sex: Females: 65.6%; Males 34.4% Race/Ethnicity: Black/AA: 21.9%; White 75.0%; Hispanic: 3.1% BMI (mean): 32.8 (obese) **Reported Co-morbidities [Intervention Arm]:** Diabetes: 100%	**Team (Diabetes management intervention):** **Team Member(s):** 11 community pharmacists **PC Provider:** NR **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Pharmacist and PCP not co-located; Pharmacists contacted the patient's PCP via telephone or fax to recommend medication changes or as needed **Practice and Patient Support Components (n=32):** Patients received medication therapy management for hypertension and diabetes for 9 months. The HTN management services consisted of: drug profile completed + assessment of medication compliance + individualized adherence plan + lifestyle counseling + tracking response to treatment **Systems Components:** Relay of clinical data **Training of team members:** 3-day training on study protocol and HTN guidelines for pharmacists	**Change in SBP (mm Hg)** **Baseline: Mean** Usual care (n=15): 145.4 Intervention (n=25): 141.8 **9m: [ITT]** Usual Care (n=15): 148.13 Intervention (n=25): 124.44**Change in mean difference = -20.1** **Proportion Controlled (BP< 130/80 mm Hg):** **Baseline:** Usual care (n=15): 20.0% Intervention (n=25): 16.0% **9m: [ITT]** Usual Care (n=15): 6.8% Intervention (n=25): 48.0% **Absolute pct pt change= +45.3** **OR [95% CI]: 12.9 [1.47, 113.8]** **Additional Outcomes:** Medication adherence **Summary:** The hypertension MTM program for patients with diabetes significantly decreased SBP while increasing goal BP levels in patients in the intervention group. Patients in the control group saw an increase in SBP level and a decline in goal BP levels. Additionally, a non-significant increase in medication adherence was noted for the intervention group, while remaining constant for the control group. However, the limited quality of the study should be taken into consideration when interpreting these results.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Interpretation of results: Recruitment rate <20%; follow-up <80%; groups not comparable at baseline	See previous	**Comparison (n=20):** Study participants were part of a larger diabetes management study; additional control group details were not given.	See previous
Authors: Reid et al. 2005 **Location** United Kingdom **Setting and Scale:** 1 general practice clinic serving approx. 1000 HTN patients **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Author affiliated with Lothian Primary Care Trust (United Kingdom) **Funding:** Lothian Primary Care Development Fund (United Kingdom) **Applicability:** For this study, mainly to hypertensive patients living in the UK who saw a pharmacist during primary care visits. **Limitations:** Description: Race/ethnicity and SES data not reported Interpretation of results: No baseline data by group; unequal sample group	**Target Population (N=532):** Patients who are diagnosed with hypertension. **Inclusion:** Diagnosis of essential HTN + use of bendrofluazide + new patients with HTN referred by their PCP **Exclusion:** Dementia + house-bound + patients already being managed by secondary care specialists + HTN due to pregnancy **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 66.0 yrs. Sex: Females: 52.2%; Males: 47.8% Insurance: 100% (universal coverage) BMI (mean): 29.2 (overweight) Smoking: 16.3% **Reported Co-morbidities [Intervention Arm]:** Family history of CVD: 27.8%	**Team (Pharmacist-led intervention):** **Team Member(s):** Pharmacist **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Pharmacist and PCP were co-located; pharmacist communicated with the PCP prior to suggesting changes to meds. All changes to meds had to be approved by the PCP. **Practice and Patient Support Components (n=92):** Patients were given access to a designated HTN management clinic run by a pharmacist. During the 5 month intervention period, patients received: education on BP meds + completion of a drug profile + use of a treatment protocol and algorithm + lifestyle counseling + tracking response to treatment **Systems Components:** EMRs/EHRs **Training of team members:** NR **Comparison (n=68):** Patients received usual care for HTN from their PCP. After 5 months, patients in this group received the intervention for the subsequent 5 months of the study.	**Proportion Controlled (Target level: BP<140/85 mm Hg; BP<140/80 for diabetics)** **Baseline:** Usual care (n=68): 35.9% (both groups combined) Intervention (n=92): 35.9% (both groups combined) **5m:** Usual Care (n=68): 39.7% Intervention (n=92): 80.4% **Absolute pct pt change = +40.7** **Proportion Controlled (Audit level: BP<150/90mmHg; BP<140/85 for diabetics)** **Baseline:** Usual care (n=68): 55.8% (both groups combined) Intervention (n=92): 55.8% (both groups combined) **5m:** Usual Care (n=68): 58.8% Intervention (n=92): 95.7% **Absolute pct pt change = +36.9** **Additional Outcomes:** BP target level + BP audit standard + # of anti-hypertensives + proportion being prescribed aspirin (primary + secondary) + proportion being prescribed statins (primary + secondary) + addressing pharmaceutical care issues + patient satisfaction with care - all of these outcomes at the end of the study period a total of 10 months **Summary:** There was an improvement in the number of hypertension patients meeting both the audit and target BP control levels in the control

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	See previous	and intervention group. The number of anti-hypertensive meds taken by patients did not differ significantly in the existing patients before and after attending the clinic. Furthermore, significant changes were seen in the prescribing of aspirin and statin therapy. Moreover, a significant number of patients stated that the pharmacist increased their knowledge about HTN and lifestyle modifications.
Authors: Rinfret et al. 2009 **Location** Quebec, Canada **Setting and Scale:** 8 primary care clinics with 21 physicians and 32 community pharmacies + home BP monitors **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Author affiliated with the University of Montreal **Funding:** Pfizer + CIHR + Fonds de Recherche en Sante du Quebec **Applicability:** For this study, mainly to, middle-aged Canadian men treated in an ambulatory hospital clinic and fill prescription meds in community pharmacies. **Limitations:** Description: Race/ethnicity and SES data not provided Interpretation of results: Follow-	**Target Population (N=371):** Hypertensive patients who filled their prescriptions at one of 32 community pharmacies. **Inclusion:** ≥18 years old + office diagnosis of HTN according to American and Canadian guidelines + patient in one of 8 participating clinics **Exclusion:** Patients unlikely to complete study + chronic atrial fibrillation + pregnancy + those participating in another trial **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 55.0 yrs. Sex: Female: 45.9%; Male: 54.1% BMI (mean): 29.0 (overweight) Smoking: 19.8 **Reported Co-morbidities [Intervention Arm]:** Diabetes: 7.2% Hypercholesterolemia: 23.4%	**Team (Home monitoring and IT support group):** **Team Member(s):** Registered nurses + pharmacists **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Team members were not co-located. Most communication between team members was via an IT management system. **Practice and Patient Support Components (n=111):** Patients in this 12 month intervention received a digital home BP monitor and collected BP data weekly. Data was then sent to their PCP and team members, and based on the data, the following were delivered by team members: medication compliance assessed + use of adherence alert system + use of treatment algorithm + educational booklet on HTN given to patients + tracking response to treatment + honoraria given to PCP and pharmacist	**Change in SBP (mm Hg)** **Baseline: Mean** Usual care (n=112): 162.0 Intervention (n=111):162.1 **12m [ITT]:** Usual Care (n=112): 148.5 Intervention (n=111): 143.5 **Change in mean difference = -4.9** **Change in DBP (mm Hg)** **Baseline: Mean** Usual care (n=112): 90.3 Intervention (n=111): 91.5 **12m [ITT]:** Usual Care (n=112): 84.7 Intervention (n=111): 82.6 **Change in mean difference = -3.5** **Proportion Controlled (BP<140/90mm Hg):** **Baseline:** Usual care (n=112): 0% Intervention (n=111): 0% **12m [ITT]:** Usual Care (n=112): 28.6% Intervention (n=111): 46.0% **Absolute pct pt change = +17.4 [4.9, 29.9]** **Additional Outcomes:** 24-hour BP measures + change in daytime SBP and DBP + change in nocturnal SBP and DBP + # of medication changes driven by physicians + # of anti-hypertensive classes

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
up <80%; baseline values for proportion controlled not given	See previous	**Systems Components:** Clinical information system via telephone-linked IT support + relay of clinical data + pharmacy software **Training of team members:** NR **Comparison (n=112):** Patients received usual care, which consisted of regularly seeing their PCP and filling their prescription at one of 32 community pharmacies participating in the study. Educational booklets were also given to patients.	patients were on + medication adherence + # of visits to physicians - at 12 months **Summary:** Favorable effects were observed for all BP endpoints in HTN patients who were treated at one of the 8 clinics and filled their prescription at a participating pharmacy. Moreover, the proportion of patients achieving BP control was greater in the intervention group. Similarly, favorable results towards the intervention were observed for dose adjustments and prescription refills.
Authors: Rocco et al. 2011 **Location** Detroit, MI **Setting and Scale:** Hospital outpatient primary care clinics including 7 intervention physicians and 14 control physicians **Design:** Retrospective cohort **Quality of Execution:** Fair (3 limitations) **Organization(s):** Author affiliated with Henry Ford Health System + Wayne State University **Funding:** NR **Applicability:** For this study, mainly to, older Americans with at least one chronic condition who seek primary care at a hospital-based outpatient clinic.	**Target Population (N=1110):** Patients visiting the included outpatient clinics suffering from at least one chronic condition. **Inclusion:** 50-80 yrs. old + diagnosis of either diabetes, coronary artery disease, heart failure, and/or HTN **Exclusion:** Pregnancy + not seen by study physicians from Oct. '07 to Dec. '09 **Reported Baseline Demographics:** Age (mean): 63.8 yrs. Sex: Female: 61.0%; Male: 39.0% Race/Ethnicity: Black/AA: 45.0%; White: 52.9%; Other: 3.0% **Reported Co-morbidities:** NR	**Team (POC intervention group):** **Team Member(s):** Nurse practitioners + pharmacists **PC Provider:** Physicians **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Team members and PCP were co-located; however, no information on communication and interaction was provided. **Practice and Patient Support Components (n=593):** Patients who seek care at one of the patient-centered team care (PCTC) clinics were given a plan-of-care tool after each visit outlining healthy behaviors and actions to be taken by patients before the next visit. The intervention lasted at least 6 months and patients received the following: plan-of-care adherence tool + treatment algorithm + lifestyle counseling + patient reminders for appointments.	**Change in SBP (mm Hg)** **Baseline: Mean (SE)** Usual care (n=517): NR Intervention (n=593): NR **6m:** Usual Care (n=517): NR Intervention (n=593): NR **Change in mean difference = -1.60** **Change in DBP (mm Hg)** **Baseline: Mean (SE)** Usual care (n=517): NR Intervention (n=593): NR **6m:** Usual Care (n=517): NR Intervention (n=593): NR **Change in mean difference = -1.31** **Additional Outcomes:** HbA1c* + LDL-C* + weight loss + POC scores **Summary:** For patients suffering from at least one chronic disease condition, the POC intervention lasting at least 6 months had no significant group effects on SBP and weight loss. Slightly significant differences occurred between groups for change in DBP, with the intervention group having greater

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Limitations: Interpretation of results: Groups not comparable at baseline + potential for contamination of control group + only some intervention patients saw team members	See Previous	**Systems Components:** EMRs/EHRs + POC system support tool **Training of team members:** In-person training for physicians on how to use POC tool **Comparison (n=517):** Patients received regular care and did not use the POC tool and were not seen at the PCTC clinics. However, patients had access to institutional resources such as diabetes educators, dietitians, and weight management services.	improvement compared to the control. Furthermore, the POC intervention was significant in improving HbA1c and LDL-C levels in intervention patients. There was also a significant association between POC scores and HbA1c levels.
Authors: Rudd et al. 2004 **Location** Stanford, CA **Setting and Scale:** 2 primary care clinics + Home (BP monitor and telephone) **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Kaiser Permanente + Stanford University **Funding:** CorSolutions Inc. **Applicability:** For this study, mainly to a highly educated, predominantly affluent white population receiving care from two high quality medical centers.	**Target Population (N=1580):** Patients requiring drug therapy for HTN according to the JNC-VI guidelines **Inclusion:** For initial screening: BP ≥140/90 mmHg in the previous 6 months + history of drug treatment for HTN; For study entry: mean of two BP values ≥150/95 mmHg on two separate screening visits **Exclusion:** Lack of the following risk factors: smoking, dyslipidemia, or diabetes + >60 yrs. old + family history of CVD + target organ damage **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 59.0 yrs. Sex: Female: 50.0%; Male: 50.0% Race/Ethnicity: Black/AA: 11.0%; White: 76.0%; Asian: 4.0%; Hispanic: 1.0% Education: <H.S.: 5.0%; H.S. grad: 17.0%; >H.S.: 78.0% Smoking: 4.0%	**Team (Nurse care management):** **Team Member(s):** Nurse practitioners **PC Provider:** physician **Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** Co-location not reported, but nurse care managers contacted PCP to obtain permission to initiate new medications. **Practice and Patient Support Components (n=74):** Patients in this 6 months, nurse-managed intervention received home BP monitors and were asked to collect BP 2x/day and mail values to nurses every two weeks. The self-reported values guided drug therapy and telephone-mediated recommendations. In addition, patients received the following practice components: education on BP meds + completed drug profile	**Change in SBP (mm Hg)** **Baseline: Mean** Usual care (n=76): 154.9 Intervention (n=74):156.0 **6m:** Usual Care (n=66): 149.2 Intervention (n=69): 141.8 **Change in mean difference = -8.5** **Change in DBP (mm Hg)** **Baseline: Mean** Usual care (n=76): 87.3 Intervention (n=74): 86.1 **6m:** Usual Care (n=66): 83.9 Intervention (n=69): 79.6 **Change in mean difference = -3.1** **Additional Outcomes:** BP medication + frequency of drug changes + medication adherence **Summary:** Hypertensive patients receiving care from two high quality medical centers and receiving the 6 month telephone-mediated nurse management intervention achieved greater BP reduction values than the usual care group. Additionally, more changes in

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Limitations: Interpretation of results- Recruitment rate <20%; groups not comparable at baseline	**Reported Co-morbidities [Intervention Arm]:** Diabetes: 14.0% Hypercholesterolemia: 16.0%	+ tips for enhancing adherence + treatment algorithm used + proactive telephone follow-up + tracking response to treatment + self-monitoring via home BP monitor. **Systems Components:** Relay of clinical data via mail + data collection via electronic BP monitor + recommendation made via telephone **Training of team members:** NR **Comparison (n=76):** Usual care participants continued to receive routine care. No attempt was made to alter the frequency of office visits or any other aspect of the doctor-patient interactions. Additionally, usual care patients were given an electronic drug event monitor to measure adherence.	drug therapy were observed for the intervention group compared to the usual care group. Similar findings were observed for medication adherence as well.
Authors: Ruppar 2010 **Location** Two Midwestern cities (not identified) **Setting and Scale:** Recruitment took place in two Midwestern cities through churches, senior centers, senior living facilities, and referrals from health care providers. Study visits were conducted in the participants' homes. **Design:** RCT **Quality of Execution:** Fair (4 limitations)	**Target Population (N= 33):** Older adults with hypertension **Inclusion:** ≥60 yrs. old + diagnosed with hypertension + able to read, write, and converse in English + taking at least 1 antihypertensive medication + self-administering his/her own medications without prompts from any other person or device + Nonadherent to their antihypertensive medication, defined as a baseline MA rate of less than 85% + free of cognitive deficit + willing to complete all study contacts and measurements + able to open and close the electronic monitoring caps. **Exclusion:** Severe hypertension (BP of 180/120 mm Hg) + resided in a residential	**Intervention Team (Nurse led MA Intervention):** **Team Member(s):** Nurse practitioner (gerontological advanced practice nurse - T.M.R.) **PC Provider:** NR **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** NR **Practice and Patient Support Components (n=10):** The nurse led medication adherence intervention was delivered over an 8 week period and included: education on BP med + assessed medication compliance + adherence	**Change in SBP (mm Hg)** **Baseline: Median (IQR)** Usual care (n=5): 142.0 (31.0) Intervention (n=10): 138.0 (22.5) **5m:** Usual care (n=5): 148.0 (46.0) Intervention (n=10): 133.0 (35.5) **Change in median difference = -11.0** **Change in DBP (mm Hg)** **Baseline: Median (IQR)** Usual care (n=5): 78 (27) Intervention (n=10): 73 (11) **5m** Usual care (n=5): 82 (21) Intervention (n= 10): 77 (24.5) **Change in median difference = 0** **Additional Outcomes:** Medication adherence

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Organization(s): University of Missouri **Funding:** John A. Hartford Foundation + University of Missouri Interdisciplinary Center on Aging + Alpha Iota chapter of Sigma Theta Tau International (nursing honors society at University of Missouri) **Applicability:** From this study, it is difficult to draw strong generalizability conclusions because of the small scale. However, the majority of this sample were white females with hypertension, currently taking at least 1 anti-hypertensive medication and who frequent senior centers or assisted living facilities **Limitations:** Sample: Total number of persons eligible not reported Data analysis: Differences in medication adherence rate at baseline not controlled Interpretation of Results: Small sample size (n<20); groups not comparable at baseline	facility where medications were administered by facility staff + terminal chronic illness **Reported Baseline Demographics [Intervention Arm]:** Age (median): 72.5 yrs. Sex: Female: 80.0%; Male: 20.0% Race/Ethnicity: African American: 30.0%; White: 60.0% Native Hawaiian and Other Pacific Islander: 10.0% **Reported co-morbidities:** NR	tool provided via MEMs caps and visual cues to guide the participant + education on hypertension + proactive home outreach visits by the nurse + patient reminders for medication via MEMs caps with LCD readout and reminder card + participants completed a skills assessment to demonstrate their medication taking behavior **Systems Components:** Enhanced data collection system via MEMs cap and bottle with LCD readout for participants **Training of team members:** NR **Comparison (n=5):** Usual care (UC) participants received care through their health care providers as usual and received standard MEMs caps (w/out LCD cap) for measuring medication adherence and educational materials on managing arthritis pain. It is important to note that usual care participants were treated by a variety of health care providers, thus usual care was not consistent for all subjects.	**Summary:** SBP improved in the intervention group after 20 weeks (SBP worsen in the control group) and DBP slightly increased after 20 weeks. The author found that participants who were in the intervention group had better antihypertensive medication adherence than those in the control. Thus, this study suggests that a nurse delivered behavioral feedback approach to improving adherence may be effective for older adults taking hypertension medications, and thus result in improved blood pressure control.
Authors: Schroeder et al. 2005 **Location** Avon, UK **Setting and Scale:** 21 general practices including nurse-led clinics for patients with hypertension from urban and rural settings with a median of 3.5 nurses per practice.	**Target Population (n=837):** Patients with uncontrolled hypertension **Inclusion:** Patients coded as having hypertension + blood pressure of 150 mm Hg systolic and/or 90 mm Hg diastolic in the six months prior to study recruitment. **Exclusion:** Individuals who did not control their	**Team (Nurse-led adherence support):** **Team Member(s):** Nurse Practitioner **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=117): 152.1 (17.5) Intervention (n=128): 149.0 (15.2) **6m: [ITT]** Usual care (n=200; both groups): 147.7 (20.9) Intervention (n=200; both groups): 142.9 (17.6) **Change in mean difference [95% CI]: -2.7 [-7.2, 1.8]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Design: RCT **Quality of Execution:** Limited (5 limitations) **Organization(s):** General practices in Avon, UK **Funding:** Medical Research Council (UK) **Applicability:** From this study, mainly to UK older adults, majority males, with prevalent history of CVD attending primary care practices staffed by senior level nurses that provide care for patients with hypertension **Limitations:** Sampling: 39% of recruited patients had an uncontrolled BP at baseline – the objective was to have 100% Data Analysis: Power requirements were not met for BP outcomes Interpretation of Results: Strong possibility of contamination as nurses care for both intervention and comparison groups; Usual care already sophisticated and the intervention arm might not have been too distinct from the usual care arm ; <80% of data available for adherence	medication intake (such as some nursing home patients) + secondary hypertension+ severe dementia **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 67.9 yrs. Sex: Female: 44.0%; Male: 56.0% Smoking: 10.0% Currently on HTN meds: 100% **Reported co-morbidities [Intervention Arm]:** Diabetes: 17.1% History of CVD: 36.6%	**Team Interaction:** Nurses and GPs worked together at the practices as part of usual care. No other details on collaboration during the actual intervention were reported. **Practice and Patient Support Components (n= 128):** Patients were provided an adherence support during face to face meetings with the nurse. The intervention consisted of: use of a treatment algorithm based on standard protocols + patient education on hypertension as part of counseling + proactive follow-up via reinforcement consultation 2 months after the first session via hypertension recall systems + provider education via 20-30 minute training for nurses about adherence issues for patients + tailoring strategies to resolve individual medication problems **Systems Components** Enhanced case record/data collection system via MEMs pillboxes + hypertension recall systems **Training of team members:** Nurses received an adherence-related training lasting 20-30 minutes encouraging nurses to find individual solutions to patients' problems, taking into account their experience and knowledge of their patients. **Comparison (n=117):** Usual care was care received at general practices which included: experienced nurses in hypertension	**Change in DBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=117): 83.1 (9.9) Intervention (n=128): 83.7 (9.3) **6m: Mean (SE) [ITT]** Usual care (n=200; both groups): 79.9 (9.7)Intervention (n=200; both groups): 80.4 (10.1) **Change in mean difference [95% CI]: +0.2 [-1.9, 2.3]** **Additional Outcomes:** Medication adherence (timing and dosage) **Summary:** The effect of nurse-led adherence support on blood pressure was limited. This could have been due to several factors (see limitations). The limited quality of the study should be taken into consideration when interpreting these results.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See previous	See previous	management + use of a treatment algorithm tool + provider training on hypertension management	See previous
Authors: Scisney-Matlock et al. 2004 **Location:** NR **Setting and Scale:** Two hypertension clinics one located in a major university setting and the other in a suburban community setting providing specialty treatment for hypertension **Design:** Other design with concurrent comparison group. **Quality of Execution:** Limited (5 limitations) **Organization(s):** University of Michigan **Funding:** NIH + National Institute for Nursing Research + University of Michigan **Applicability:** From this study it is difficult to assess applicability with limited information on the intervention details, lack of baseline values, and the lack of time point information. **Limitations:** Description: Intervention and population not described. Sampling: The sample was taken from another trial but screening procedures were not described.	**Target Population (N= NR):** Female patients attending hypertension clinics. **Inclusion:** Between 30-80 yrs. old. The sample came from women who were recruited for the Managed Associated Perceptions (MAP) trial which was designed to test the efficacy of cognitive-behavioral intervention on improving BP and medication compliance (No further details provided). **Exclusion:** NR **Reported Baseline Demographics [Intervention Arm]:** Age(mean): 60.0 yrs. Sex: Female: 100% Race/Ethnicity: African-American: 68.8%; Other: 31.2% Education (mean): 14.22 yrs. **Reported co-morbidities:** NR	**Team (MD-Nurse team):** **Team Member(s):** Nurse **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** NR **Practice and Patient Support Components (n= 32):** Patients received care at a hypertension clinic in a model that used MD-Nurse teams to deliver care. No other details provided. **Systems Components:** Enhanced data collection system via 24 hour BP monitor **Training of team members:** NR **Comparison (n= 32):** No details given on the control group, however 24-hour BP was collected same as the intervention group.	**Change in 24-hr SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=32): NR Intervention (n=32): NR **Follow-up: NR** Usual care (n=32): 137.0 (13.0) Intervention (n=32): 132.0 (15.7) **Change in mean difference = -5.0** **Change in 24-hr DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=32): NR Intervention (n=32): NR **Follow-up: NR** Usual care (n=32): 80.0 (10.8) Intervention (n=32): 75 (10.3) **Change in mean difference = -5.0** **Additional Outcomes:** hypertension knowledge + communication/ cognitive representations of discussions with health care providers **Summary:** The group whose care was managed by a physician-nurse team demonstrated lower means for 24-hr systolic blood pressure and diastolic blood pressure than the group whose care was managed by physicians. There were no group differences for knowledge of hypertension. However, the limited quality of this study should be considered when interpreting results.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Data analysis: No controlling reported for confounders Interpretation of Results: Study groups significantly different by race at baseline; no baseline values provided	See Previous	See Previous	See Previous
Authors: Simpson et al. 2011 **Location:** Edmonton, Canada **Setting and Scale:** 5 primary care clinics affiliated with 1 primary care network **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Edmonton South Side Primary Care Network **Funding:** Canadian Diabetes Association + Institute of Health Economics + Alberta Heritage Foundation for Medical Research + Canadian Institutes of Health Research **Applicability:** From this study, mainly to patients with type 2 diabetes receiving care in a medical-home like arrangement with addition of new team members in an environment with universal health coverage. **Limitations:** Interpretation of results: sample needed to detect power not met + potential for contamination underestimating results in the	**Target Population (N =1,183):** Patients with type 2 diabetes who regularly attend included primary care clinics **Inclusion:** Type 2 diabetes **Exclusion:** Followed in specialty clinics for diabetes, hypertension, or dyslipidemia + cognitively impaired + did not administer own medication + cannot speak English **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 58.8 yrs. Sex: Female: 56.5%; Male: 43.5% BMI (mean): 31.8 (obese) Smoking: 14.5% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 100% Currently on HTN meds: 71.0% AF: 3.1% CAD: 13.7% Stroke: 5.3% PAD: 1.5% Depression: 23.7%	**Team (primary care teams + pharmacist):** **Team Member(s):** pharmacists **PC Provider:** 18 family physicians **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Pharmacists were co-located with PCP. Interaction b/t team and PCP occurred face-to-face. **Practice and Patient Support Components (n=131):** A pharmacist was added to an existing primary care team including physicians, physiotherapists, dietitians, and social workers. The pharmacist intervention included: patient education on BP meds + drug profile completed + assessed med compliance + treatment algorithm based on Canadian guidelines + proactive follow-up visits in-person and via telephone + discussed treatment recommendations with PCP who made all medication changes **Training of team members:** Pharmacists were certified diabetes educators and completed online training courses for hypertension and diabetes management	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n= 129): 128.3 (15.7) Intervention (n=131): 130.4 (14.9) **12m [ITT]:** Usual Care (n=129): 125.8 Intervention (n=131): 123.0 **Change in mean difference [95%CI] = -4.9 [-8.7, -1.0]** **Change in SBP with BP >130/80 at baseline (mm Hg)** **Baseline: Mean (SD)** Usual care (n= 71): 137.9 (14.1) Intervention (n=82): 138.7 (NR) **12m [ITT]:** Usual Care (n=71): 131.3 (12.0) Intervention (n=82): 124.8 (NR) **Change in mean difference = -7.2** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=129): 73.9 (10.8) Intervention (n=131): 74.4 (10.0) **12m [ITT]:** Usual Care (n=129): 74.5 Intervention (n=131): 72.1 **Change in mean difference [95%CI] = -2.9 [-5.6,-0.2]** **Proportion Controlled (BP<130/80 mm Hg):** **Baseline:** Usual care (n=71): 0% Intervention (n=82): 0% **12m [ITT]:** Usual Care (n=71): 30.0% Intervention (n=82): 54.0% Absolute pct pt change [95% CI]= 24 [8.8,

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
intervention arm.	See Previous	**Comparison (n=129):** Patients received care as usual without pharmacist involvement at included clinics. Included clinics already had established teams involving physicians, dietitians, physiotherapists, and social workers	39.2] **OR [95%CI]: 2.76 [1.41, 5.39]** **Additional Outcomes:** ≥10% reduction in SBP + change in HTN meds + CVD risk score + healthcare utilization + reduction in CVD risk factors **Summary:** Pharmacist collaboration with a primary care team showed significant improvements in SBP, DBP, the proportion of patients with controlled BP, and in patients' achieving ≥10% reduction in SBP, in patients with type 2 diabetes receiving care in a medical home like arrangement. Glycemic control and lipids also improved. No significant differences were found in emergency visits, hospitalizations, or all-cause mortality between groups.
Authors: Svetkey et al. 2009 **Location:** Central North Carolina **Setting and Scale:** Four community-based primary care practices matched by specialty (internal medicine or family practice) and patient socioeconomic mix. Four physicians were enrolled from each of the practices with 10-15 patients recruited per enrolled physician **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Authors affiliated with Duke University	**Target Population (N=2846):** Adults diagnosed with hypertension **Inclusion:** Receiving primary care from a randomized physician + at least 25 years old + hypertension diagnosis (>140 and/or >90 at ≥2 clinic visits in the past year or taking antihypertensive meds) + able to participate in all intervention activities **Exclusion:** CVD event in the past 6 months + Chronic Kidney Disease + planning to leave area before intervention ended + pregnant/breast feeding or planning pregnancy before study end + current participation in another clinical trial **Reported Baseline Demographics:** **Intervention Arm 1:** Age (mean): 59.0 yrs. Sex: Female: 66.0%; Male: 34.0% Race/Ethnicity: Black/AA: 44.0%; Not	**Intervention: Team** **(Patient and MD hypertension management):** **Team Member(s)** 2 Community Health Advisors per clinic + 2 behavioral interventionists trained and certified in delivering group education focusing on diet and exercise using motivational interviewing techniques **[both intervention arms].** **PC Provider:** Family Physicians + Internists **Team Member Role for meds:** Only adherence support and information for current HT meds provided **[both intervention arms]** **Team Interaction:** Team members and PCP were co-located however, no information on communication between PCPs, behavioral interventionists and	**Change in SBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=141):131.6 (14.6) Intervention (n=140):132.1 (17.6) **18m:** Usual care (n=122):NR Intervention (n=124):NR **Change in mean difference= +0.7** **Baseline Arm 2:** Usual care (n=141):131.6 (14.6) Intervention (n=145): 133.8 (16.3) **18m** Usual Care (n=122):NR Intervention (n=128):NR **Change in mean difference =-1.1** **Change in DBP (mm Hg)** **Baseline Arm 1: Mean (SD)** Usual care (n=141):73.3 (10.5) Intervention (n=140):73.3 (12.6) **18m:** Usual care (n=122):NR Intervention (n=124):NR **Change in mean difference = +1.5**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Funding: NIH **Applicability:** From this study, mainly to female populations with high representation of African Americans, mostly non-low SES, with a history of hypertension and dyslipidemia and with access to primary care at community-based clinics. **Limitations:** Sampling: Only 10% of eligible patients were recruited.	reported: 56.0% BMI (mean): 31.8 (obese) **Intervention Arm 2:** Age (mean): 60.7 yrs. Sex: Female: 55.0%; Male: 45.0% Race/Ethnicity: Black/AA: 33.0%; Hispanic: 1.0%; Not reported: 66.0% BMI (mean): 32.6 (obese) **Reported co-morbidities:** Smoking: 8.0% (both arms) Hypercholesterolemia: 44.0% (both arms) Diabetes:26.0% (Arm 1);29.0%(Arm 2)	CHWs were provided. **Practice and Patient Support Components** **Arm 1 [patient only] (n= 140):** Behavioral interventionists and CHWs delivered 20 weekly group sessions over 6 months including: use of an adherence plan/tool + lifestyle counseling + proactive follow up in-person for 6 months and via telephone 1 year at intervention end + promotion of self-monitoring, goal setting and social support + use of a group education model **Arm 2 [patient +MD] (n=145):** Patients received the same intervention as Arm 1. In addition PCPs received the following: treatment algorithm based on the JNC-7 guidelines + online modules on JNC-7 guidelines and lifestyle changes + CME credit for providers + quarterly reports were prepared and provided to physicians showing their performance in improving clinical outcomes **Systems Components** **Arm 1:** Telephone follow-up **Arm 2:** Enhanced case record/data collection system via clinical performance forms used to generate quarterly reports; telephone follow-up **Training of team members (both arms):** 2 behavioral interventionists were certified and trained in group education and motivational interviewing.	**Baseline Arm 2: Mean (SD)** Usual care (n=141):73.3 (10.5) Intervention (n=145): 75.3 (11.1) **18m:** Usual care (n=122):NR Intervention (n=128):NR **Change in mean difference = - 0.4** **Proportion Controlled (<140/90 mm Hg)** **Baseline Arm 1:** Usual care (n=141): 62.5% Intervention (n=140): 63.3% **18m [observed]:** Usual care (n=122): 78.6% Intervention: (n=124): 81.3% **Absolute pct. pt. change = +1.71** **Baseline Arm 2:** Usual care (n=141): 62.5% Intervention (n=145): 59.8% **18m [observed]:** Usual care (n=122): 78.6% Intervention (n=128): 73.7% **Absolute pct. pt. change = -1.95** **18m [ITT]:** **Baseline Arms Collapsed:** Usual care (n=285): 62.5%Intervention (n=285): 61.8% Usual care (n=285): 68.1% Intervention (n=285): 68.4% **Absolute pct. pt. change [95% CI] = +1.10 [-8.30, 10.50]** **Additional Outcomes:** physical activity + dietary intake + urinary sodium + weight **Summary:** The intensive behavioral intervention significantly reduced BP at 6 months but was not sustained when the intensity was reduced in women with a history of hypertension and dyslipidemia. The physician-focused intervention did not bring

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Comparison (n=141):** Participants had an individual brief visit with an interventionist after randomization and received advice and brochures on lifestyle modification for BP control based on JNC-7 guidelines. Comparison group were offered an abbreviated intervention at the end of the study.	about significant improvement in BP outcomes on its own, but seemed to work when combined with the patient-focused intervention.
Authors: Taylor et al. 2003 **Location** Pickens County, AL **Setting and Scale:** 3 university affiliated family medicine clinics **Design:** Other design with contemporaneous comparison group **Quality of Execution:** Limited (5 limitations) **Organization(s):** University of Alabama School of Medicine - Tuscaloosa + Auburn University **Funding:** AHSP Research and Education Foundation **Applicability:** For this study, mainly to, low-income elderly white women living in a rural area and taking at least six medications on average. **Limitations:** Sampling: Sampling frame not	**Target Population (N=NR):** Patients who are at high risk for medication-related adverse events **Inclusion:** ≥18 years old + received care at the participating clinics + at high risk for medication-related adverse event as defined by 3 or more of the following: 5 or more medications in the drug regimen, 12 or more doses per day, 4 or more medication changes in the previous year, 3 or more concurrent diseases + history of med non-compliance + presence of drugs requiring therapeutic monitoring **Exclusion:** Cognitive impairment + history of missed office visits + scheduling conflicts + life expectancy of <1 year **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 64.4 yrs. Sex: Female: 63.6%; Male: 36.4% Race/Ethnicity: White: 60.6%; Other (race NR): 39.4% Insurance: Uninsured: 17.0% **Reported Co-morbidities:** NR	**Team (Pharmacist intervention group):** **Team Member(s):** Pharmacists **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** Team members and PCP were co-located, and therapeutic recommendations were communicated by pharmacists to physicians through discussions or progress notes. **Practice and Patient Support Components (n=33):** Patients met with a pharmacist during their regularly scheduled office visits. Pharmacists evaluated therapeutic dosage and effectiveness and made recommendations based on therapeutic algorithms and guidelines. Patients also received the following during their visit: education on BP meds + completed drug profile + assessment of medication compliance + adherence plan + individualized education on HTN + lifestyle counseling + tracking response to treatment + medication reminders + pillbox	**Proportion Controlled (BP<140/90 or <135/80mm Hg for diabetics):** **Baseline:** Usual care (n=29): 31.0% Intervention (n=24): 12.5% **12m:** Usual Care (n=29): 27.6% Intervention (n=24): 91.7% **Absolute pct pt change = +82.6** **Additional Outcomes:** Diabetes control* + Lipid control* + Anticoagulation therapy goal + hospitalization/ED visits + QoL +prescribing appropriateness and medication misadventures + medication compliance + medication knowledge + # of meds prescribed + patient satisfaction with pharmacy-related care at 12 months **Summary:** In a patient population for being at high risk for medication-related adverse events, the pharmacist intervention was able to significantly increase the proportion of patients with controlled BP after 12 months. Similar results were found for diabetes, dyslipidemia, and anticoagulation therapy. On the contrary, proportion control rates declined in the control group, and no significant differences in health-related quality-of-life scores were observed between the groups after 12 months. However, the limited quality of the study should be considered when interpreting results.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
described Measurement: Measurements not standardized Data Analysis: Confounders not dealt with Interpretation of results: Significant difference in baseline values; contamination/ Hawthorne effect	See Previous	training + provider education on medication misadventures **Systems Components:** NR **Training of team members:** Orientation sessions were held at each clinic to familiarize physicians and clinic staff with the protocol. **Comparison (n=36):** Patients received standard medical care at the clinics + pharmacists evaluated each patient's pharmacotherapy and documented clinical outcomes, but provided no advice or recommendations. Patients also received education on BP meds.	See Previous
Authors: Tobari et al. 2010 **Location** Ibaraki Prefecture, Japan **Setting and Scale:** 1 community-based primary care center which had 2,000 outpatient visits/m (Fiscal Year 2007). The total number of staff at the clinic was not detailed but the study included 5 physicians **Design:** RCT **Quality of Execution:** Fair (2 limitations) **Organization(s):** Authors affiliated with Miho Medical Clinic + Osaka University Graduate School of Medicine + Yamagata University School of Medicine + Harvard School of Public Health + University of Tsukuba and	**Target Population (N=236):** Patients 40-79 years of age with hypertension **Inclusion:** Either taking antihypertensive medications under a stable regimen or treatment-naïve + an SBP of 140–179 mm Hg and/or DBP of 90–109 mm Hg, **Exclusion:** Patients with a history of cardiovascular disease + rheumatoid arthritis + endocrine diseases + diabetes mellitus requiring medications + on exercise restriction + secondary hypertension + renal dysfunction + on non-steroidal anti-inflammatory drugs. **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 61.7 yrs. Sex: Female: 37.0%; Male: 63.0% BMI (mean): 25.0 (overweight) Smoking: 26.0% Currently on HTN meds: 94.0%	**Intervention Team (Pharmacist-Physician Collaboration):** **Team Member(s):** Pharmacist with 10 years of experience **PC Provider:** Physician **Team Member Role for meds:** Changes to meds can be made with PCP approval/consultation **Team Interaction:** All physicians and the study pharmacists worked at the same primary care center throughout the study. Physicians and the pharmacist discussed the treatment plan over the telephone, or face-to-face if necessary, during the examination of the patient. **Practice and Patient Support Components (n= 66):** Participants in the intervention group received 15min. pharmacist counseling every month for 6 months to set-up individual goals	**Change in SBP (mm Hg)** **Baseline: Mean** Usual care (n=66): 139.0 Intervention (n=66): 138.0 **6m:** Usual care (n=64): NR Intervention (n=64): NR **Change in mean difference [95% CI] = -1.9 [-6.1, 2.3]** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=66): 83.0 Intervention (n=66): 81.0 **6m:** Usual care (n=64): NR Intervention (n=64): NR **Change in mean difference [95% CI] = -0.7 [-3.4, 1.9]** **Proportion Controlled (BP<135/85 mm Hg)** **Baseline:** Usual care (n=66): 38.0%

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Osaka University **Funding:** NR **Applicability:** From this study, mainly to older (60-80 yrs.) male, overweight patients with mild/moderate hypertension, on anti-hypertensive medications, with high medication adherence, and able to monitor their blood pressure. **Limitations:** Description: No race/ethnicity OR SES information provided no description of whether BP monitors were distributed to patients or whether patients already had them Interpretation of results: Potential for contamination which may have underestimated the benefit of the intervention on BP outcomes	**Reported co-morbidities [Intervention Arm]:** Alcohol/substance abuse (>23 g/day): 45.0%	and offer tailored messages related to individual goals. In addition, the intervention included: education about anti-hypertensive drug therapy to participants + +pharmacist offered a choice of drugs that could be prescribed to the patient + pharmacist attached counseling reports and recommendations on medication changes and BP data into the patient's medical record as a feedback mechanism for the PCP + treatment recommendations constructed using Japanese Society of Hypertension Guidelines for the Management of Hypertension **Systems Components:** automatic BP monitors **Training of team members:** NR **Comparison (n= 66):** Both the intervention and usual care groups had a "run-in" period in which both received the same services. These services included: counseling session with the pharmacist orienting them to the program + education leaflets about treatment of hypertension + practice in use of home BP device + questioned about their lifestyle behaviors + monthly downloading of home BP records sent to PCP + consultation with pharmacist if needed. The comparison group received the intervention at study end	Intervention (n=66): 40.0% **6m [observed]:** Usual care (n=64): 47.0% Intervention (n=64): 53.0% **Absolute pct pt change = +4.0** **6m [ITT]** Usual care (n=66): 45.5% Intervention (n=66): 51.5% **Absolute pct pt change [95% CI] = +4.0 [-13.0, 21.0]** **OR [95% CI] = 1.4 [0.6, 3.1]** **Additional Outcomes:** Change in home BP (morning and night) + changes in type of anti-hypertensive medications + changes in timing of anti-hypertensive medications + cardiovascular risk factors + lifestyle factors **Summary:** The physician–pharmacist cooperation intervention, including intensive counseling regarding lifestyle modifications and antihypertensive medication changes, improved the control of home morning BP and reduced the use of antihypertensive medications as well as BMI, sodium intake, and the use of tobacco in patients with mild to moderate hypertension Both the intervention and comparison group saw reductions in office DBP and SBP, and home morning SBP, however differences between groups were not significant.
Authors: Tobe et al. 2006 **Location** Battleford region of northern	**Target Population (N= 693):** First Nations adults with hypertension and diabetes	**Team (Home care nurse management):** **Team Member(s):** Nurse **PC Provider:** Physician	**Change in SBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=47): 150.5 (19.1) Intervention (n=48): 149.7 (10.5)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Saskatchewan, Canada **Setting and Scale:** Primary care clinics caring for the First Nation people of the region. Additional information about the region and the number of clinics/physicians was not provided. **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Authors affiliated with Sunnybrook and Women's College Health Science Centre + St. Paul's hospital + University of Saskatchewan + Battlefords Tribal Council Indian Health Services **Funding:** Canadian Institute of Health Research (CIHR), in partnership with Pfizer Canada **Applicability:** From this study, mainly to middle-aged, female First Nations individuals with diabetes and hypertension living on rural Canadian reservations **Limitations:** Interpretation of Results: Physicians and patients were not blinded to the study; possibility of contamination as providers cared for both intervention and control patients; sample size needed to detect power not met	**Inclusion:** 18 years or older + diagnosis of type 2 diabetes + persistent hypertension with a SBP≥130 mm Hg, DBP ≥ 80 mm Hg or both **Exclusion:** Use of beta-blocker **+** women of child-bearing age not able to use reliable method of birth control **+** connective tissue disorder **+** severe systemic or malignant disease + secondary hypertension + serum creatinine level > 250 µmol/L + Cerebrovascular event within 6 months + severe CVD-related disease + Revascularization procedure within 3 past three months before study recruitment + Active hepatic disease **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 55.4 yrs. Sex: Female: 62.0%; Male: 38.0% High BMI (Mean): 34.2 (obese) **Reported co-morbidities:** Diabetes: 100%	**Team Member Role for meds:** Changes to meds can be made independent of PCP **Team Interaction:** A letter summarizing the patient's current medication, BP, and lab test results was sent to the patient's PCP after each home visit. If medications were changed, follow-up was arranged with the PCP **Practice and Patient Support Components (n= 50):** All patients were seen by their home care nurse. The intervention included: healthy lifestyle classes + provider education via clinical practice guidelines for managing hypertension sent to the PCP+ adherence support via distribution of blister pack medication + use of a treatment algorithm or decision tool + tracking response to treatment and titrating regimen as necessary + supervision by a hypertension specialist regarding titration of medications **Systems Components:** automated blood-pressure cuffs **Training of team members:** NR **Comparison (n= 49):** Participants received usual care in addition to healthy lifestyle classes + provider education via clinical practice guidelines for managing hypertension sent to the PCP	**12m [ITT]:** Usual care (n=47): 133.5 (18.1) Intervention (n=48): 125.7 (16.6) **Change in mean difference = -7.0** **Change in DBP (mm Hg):** **Baseline: Mean (SD)** Usual care (n=47): 84.2 (11.1) Intervention (n=48): 87.1 (8.4) **12m [ITT]:** Usual care (n=47): 77.4 (11.3) Intervention (n=48): 75.5 (12.7) **Change in mean difference =-4.8** **Additional Outcomes:** HbA1c levels* **Summary:** Among First Nations people with existing hypertension and diabetes, intervention of having a home care nurse monitor blood pressure and follow a predefined treatment algorithm was as effective in lowering systolic blood pressure over time as was the control strategy of having a home care nurse monitor blood pressure only while the physician made decisions on follow-up treatment. The intervention was, however, significantly more effective than the control strategy in lowering diastolic pressure. Improvement in blood pressure in both groups over the study period may have been due in part to the patients' involvement in the study program, with education given and blood pressure measured by the home care nurse in both groups.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Authors: Ulm et al. 2010 **Location** Bavaria, Germany **Setting and Scale:** Multiple primary care clinics employing 19 physicians + Home (for BP monitors) **Design:** RCT **Quality of Execution:** Fair (3 limitations) **Organization(s):** Author affiliated with Institutions for Medical Statistics and Epidemiology, University of Munich Technical **Funding:** AOK Bavaria **Applicability:** For this study, mainly to older hypertensive and overweight males living in Germany. **Limitations:** Description: Race/SES not provided Sampling: Total # sampled not provided + no exclusion criteria listed + no sampling frame provided Interpretation of results- Follow-up <80% for control group	**Target Population (N=NR):** Patients with a prior diagnosis of HTN **Inclusion:** SBP ≥140 mm Hg **Exclusion:** NR **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 65.8 yrs. Sex: Female: 41.2%; Male: 58.8% BMI (mean): 29.0 (overweight) Smoking: 14.7% **Reported Co-morbidities [Intervention Arm]:** Diabetes: 20.6%	**Team (Nurse Led Intensive Care Program):** **Team Member(s):** Registered nurse **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HTN meds provided **Team Interaction:** Team members and PCP were co-located; however, information on team interaction and communication was not provided. **Practice and Patient Support Components (n=102):** Hypertensive patients in the 12-month nurse-led intensive care program received blood pressure monitors to measure BP at home. Patients visited the GP every 6 weeks to receive individualized advice on medication compliance and changing lifestyle factors. In addition to the BP monitor, patients received: an adherence plan to aid in complying with meds + a booklet on HTN. **Systems Components:** Tech-enabled resources via home BP monitors **Training of team members:** Nurses were trained by the author, but the type of training completed was not reported. **Comparison (n=98):** Patients randomized into the usual care group received a blood pressure monitor, and were urged	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=98): 156.3 (14.7) Intervention (n=102): 155.9 (11.8) **12m:** Usual Care (n=68): 140.6 (17.7) Intervention (n=86): 136.6 (14.4) **Change in mean difference = -3.6** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=98): 92.7 (8.6) Intervention (n=102): 90.8 (10.4) **12m:** Usual Care (n=68): 82.5 (8.8) Intervention (n=86): 81.6 (8.2) **Change in mean difference = +1.00** **Additional Outcomes:** Change in 24-hour BP + change in nighttime BP + change in daytime BP + change in lifestyle factors (weight, physical activity, tobacco smoking, and alcohol consumption) + medications **Summary:** There were no significant differences observed after 12 months for 24-hr SBP between the nurse-led intervention and the control group delivered to mainly older hypertensive and overweight males, even though there was a decline in SBP measures. Similar results were also observed for 24-hr DBP as well. Moreover, there were no changes in risk factors for either the nurse-led intervention group or the control group. There was also no significant difference between groups with respect to the medication prescribed.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	to continue their routine visits to their general practitioner's office at least every 6 months, unless there was a specific reason for an earlier visit.	See Previous
Authors: Wakefield et al. 2011 **Location** Iowa City, Iowa **Setting and Scale:** 1 VA Medical Center (ICVAMC) serving more than 36,000 veterans **Design:** RCT **Quality of Execution:** Good (1 limitation) **Organization(s):** Dept. of Veterans Affairs **Funding:** Dept. of Veterans Affairs **Applicability:** From this study, mainly to older white male veterans with at least a high school-level education, and receiving primary care from the VA. **Limitations:** Interpretation of results: Follow-up <80%	**Target Population (N=2,756):** Patients with type 2 diabetes and hypertension being treated by a VA primary care provider. **Inclusion:** A landline telephone in the home + receipt of primary care from the VA in the last 12 months + will receive primary care for the duration of the study **Exclusion:** Legally blind + resident in a long-term care facility + a diagnosis of dementia or psychosis **Reported Baseline Demographics:** **Intervention Arm 1:** Age (mean): 67.8 yrs. Sex: Female: 1%; Male: 99.0% Race/Ethnicity: Black/AA: 3.0%; White: 97.0% Education: <H.S.: 10.0%; H.S. grad: 28.0%; Post H.S.: 61.0% BMI (mean): 33.1 (obese) **Intervention Arm 2:** Age (mean): 68.4 yrs. Sex: Female: 1.0%; Male: 99.0% Race/Ethnicity: Black/AA: 2.0%; White: 96.0%; Hispanic: 1.0%; American Indian: 1.0% Education: <H.S.: 14.0%; H.S. grad: 41.0%; Post H.S.: 44.0% BMI (mean): 33.1 (obese) **Reported co-morbidities:** Diabetes: 100% (both arms)	**Team (home tele-health intervention):** **Team Member(s):** two registered nurses **[both intervention arms]** **PC Provider:** Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **[both intervention arms]** **Team Interaction:** Team members and PCP were not co-located; interaction only occurred between team members and PCP during enrollment to obtain BP and glucose parameters for a change in treatment plan. **Practice and Patient Support Components** **Arm 1 [High-Intensity] (n=73):** Nurses gave patients a home tele-health device and instructed them to measure BP daily and blood glucose as directed by their physician. The intervention lasted 6 months and consisted of: assessing medication compliance + an adherence tool providing daily prompts on medication adherence + diabetes and HTN disease management algorithm based on national guidelines + lifestyle counseling + telephone follow-up as needed + tailored messages transmitted from the nurses via the tele-health device to the patients	**Change in SBP (mm Hg): Mean** **Baseline Arm 1:** Usual care (n=107):134.0 Intervention (n=93):138.0 **6m:** Usual Care (n=97):138.45 Intervention (n=77):131.96 **Change in mean difference = -10.49** **Change in SBP (mm Hg): Mean** **Baseline Arm 2:** Usual care (n=107):134.0 Intervention (n=102): 136.0 **6m:** Usual Care (n=97):138.48 Intervention (n=83):135.71 **Change in mean difference = -0.77** **Additional Outcomes:** HbA1c (%) + medication adherence **Summary:** A nurse-managed home tele-health intervention was found to improve SBP significantly in patients with comorbid diabetes and hypertension compared to the usual care group. The results for the high-intensity intervention group were significantly better compared to the low-intensity intervention group. Intervention subjects experienced decreased A1c during the 6-month intervention period compared with the control group, but 6 months after the intervention was withdrawn, the intervention groups were comparable with the control group. Medication adherence on the other hand, improved in all three groups with no significant difference found among the groups.

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
See Previous	See Previous	**Arm 2 (n=79) [Low-Intensity]:** Patients in the low-intensity group received the same intervention as the high-intensity group (for 6 months), with one exception: the disease management algorithm was absent. **Systems Components (both arms):** EMRs/EHRs + relay of clinical data + enhanced data collection via home tele-health device **Training of team members:** NR **Comparison (n=94):** Patients received care and scheduled follow-up appointments at the clinic as usual and did not have access to the intervention nurses.	See Previous
Authors: Wood et al. 2008 **Location** Denmark, Italy, Poland, Spain, the Netherlands, and the UK **Setting and Scale:** 12 (six pairs) general-practice centers (scale not reported). **Design:** RCT (paired, cluster) **Quality of Execution:** Fair (4 limitations) **Organization(s):** General practices in the study areas (names provided) **Funding:**	**Target Population (N= 2385):** Patients at high risk of cardiovascular disease **Inclusion:** Between 50-80 yrs. old + no history of CVD but at high risk (SCORE ≥5% during 10 years) + not on any treatment OR were on treatment with antihypertensive or lipid-lowering drugs, or both, started in the past year + no history of diabetes mellitus; Or were diagnosed with diabetes mellitus within the past 3 years. **Exclusion:** Severe heart failure + severe physical disability + dementia **Reported Baseline Demographics [Intervention Arm]:** Age (mean): 62.0yrs.Sex: Female: 50.0%; Male: 50.0%	**Team (Nurse-based):** **Team Member(s):** Nurse **PC Provider:** Family Physician **Team Member Role for meds:** Only adherence support and information for current HT meds provided **Team Interaction:** Nurses were co-located with physician and monitored clinical parameters and shared the results with physicians (not specified) **Practice and Patient Support Components (n=1118):** Patients in the intervention practices had an initial assessment of lifestyle and risk factors and drug treatment. The intervention consisted of: patient education on BP meds + drug profile completed	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=331): NR Intervention (n=1103): NR **12m:** Usual care (n=NR):NR Intervention (n=NR): NR **Change in mean difference [95% CI] = -4.8 [-10.2, 0.6]** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=331): NR Intervention (n=1103):NR **12m:** Usual care (n=NR): NR Intervention (n=NR): NR **Change in mean difference [95% CI] = -2.7 [-5.9, 0.6]**

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Astra Zeneca + European Society of Cardiology **Applicability:** From this study, mainly to European general practices for adult patients with high risk for CVD and willing to attend weekly sessions focused on risk factors and lifestyle counseling along with their family members. **Limitations:** Description: Race/ethnicity or SES information not reported Data analysis: large sample size difference between control and intervention groups. Interpretation of Results: Possible Hawthorne effect; Power issues since study included only 1 general practice from each country	Currently on HTN meds (BP + lipids): 27.0% **Reported co-morbidities [Intervention Arm]:** Diabetes: 31.0%	+ assessed medication compliance + personal record card for lifestyle and risk factor targets + physician use of European guidelines + intensive weekly lifestyle counseling + proactive follow-up + self-management tools via pedometers, physical activity plans, family support packs, and food diary + individualized attention to lifestyle factors for patients + group meetings **Systems Components:** Pedometers **Training of team members:** NR **Comparison (n= 331):** Received standard medical care from their primary care providers.	**Proportion Controlled (BP<140/90 mm Hg and <130/80 mm Hg for diabetics)** **Baseline:** Usual care (n=331): 38.0% Intervention (n=1103):37.0% **12m [observed]:** Usual care (n=1004): 41.0% Intervention (n=1016): 58.0% **Absolute pct pt change =18.0** **12m [ITT – intervention group only]:** Usual care (n=1004): 41.0% Intervention (n=1103): 53.0% **Absolute pct pt change [95% CI] = 13.0 [8.8, 17.2]** **Additional Outcomes:** BMI + TC* + LDL* + Hb A1C* + lifestyle factors + hypertensive meds **Summary:** Blood Pressure, as well as other outcomes, improved for the intervention group over the control group at 12 months, thus suggesting the intervention was successful in integrating preventive cardiac services into primary care in European settings and also by involving partners of those with high risk of cardiac disease in the process.
Authors: Zillich et al. 2006 **Location** Eastern Iowa **Setting and Scale:** 12 community pharmacies with a total of 25 pharmacists belonging to a network of community pharmacies. **Design:** RCT	**Target Population (N= NR):** Patients receiving antihypertensive medications from participating pharmacies **Inclusion:** > 20 yrs. old + diagnosed with hypertension + taking 1–3 BP medications with no changes in the regimen or dose within the past 4 weeks + receiving BP medication from the same physician for at least 2 consecutive months + patients w/out	**Team (Pharmacist + Home Monitor, High Intensity):** **Team Member(s):** Pharmacist (40% with BS Pharmacy and 73% with Pharm D, 7% with MS degrees and 53% had completed residency) **PC Provider:** Physician **Type of TBC:** Changes to meds can be made with PCP approval/consultation	**Change in SBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=61): 151.6 (12.9) Intervention (n=64): 151.5 (15.6) **3m:** Usual care (n=60): 142.6 (NR) Intervention (n=57): 138.1 (NR) **Change in mean difference = -4.5** **Change in DBP (mm Hg)** **Baseline: Mean (SD)** Usual care (n=61): 85.3 (10.7) Intervention (n=64): 85.3 (11.6)

*Results provided in Appendix

Study Details	Population Characteristics	Intervention + Comparison Description	Major Results and Summary
Quality of Execution: Fair (4 limitations) **Organization(s):** Network of community pharmacies (name not provided) **Funding:** Community Pharmacy Foundation **Applicability:** From this study, mainly to white, older adult populations with uncontrolled blood pressure and high prevalence of dyslipidemia who were willing to participate in regular visits with pharmacists and use home BP monitors and record logs of their BP **Limitations:** Description: No SES information Sampling: No description of sampling frame Data analysis: Power needs were not met for SBP estimation Interpretation of Results: Personnel were not blinded and recruitment was purely voluntary, which might have favored certain patients.	diabetes with SBP between 145 and 179 mm Hg or DBP between 95 and 109 mmHg + patients with diabetes with SBP between 135 and 179 mm Hg or DBP between 90 and 109mm Hg. **Exclusion:** BP greater than 180/110 mm Hg + MI + stroke + a serious renal or hepatic disease + pregnancy + dementia/cognitive impairment. **Reported Baseline Demographics:** Age (mean): 64.0 yrs. Sex: Female: 58.0%; Male: 42.0% Race/Ethnicity: White: 97.0%; not reported: 3.0% Smoking: 9.0% **Reported co-morbidities:** Diabetes: 23.0% Hypercholesterolemia: 50.0% Renal Disease: 1.0% Heart Disease: 30.0% Cerebrovascular Disease: 8.0%	**Team Interaction:** Team members were not co- located. Recommendations and BP logs were sent via facsimile to the physician and followed by a telephone call. Physicians were asked to consider the recommendation(s) and reply to the pharmacist. **Practice and Patient Support Components (n= 64):** All patients received training in proper BP measurement. Patients were scheduled to meet with the pharmacists 4x over 3months. Visits consisted of: education on BP meds + drug profile completed + strategies to address specific adherence barriers + Recommendations based on current national guidelines and tailored for individual patients + booklets on hypertension +self-management strategies via training on use of home BP monitors +provider education on evidence-based guidelines **Systems Components:** Relay of clinical data via home BP outcomes from home BP **Training of team members:** Pharmacists received training on proper BP measurement using an automated home monitoring device + education on evidence-based guidelines. **Comparison (n= 61):** Participants received usual care plus a low intensity intervention which included 3 visits in 3 months, and training in proper BP measurement	**3m:** Usual care (n=60): 79.7 (NR) Intervention (n=57): 76.5 (NR) **Change in mean difference =-3.2** **Proportion Controlled :** **Baseline:** Usual care (n=61): 0% Intervention (n=64): 0% **3m [ITT]** Usual care (n=61): 30.0% Intervention (n=64): 42.0% **Absolute pct pt change [95% CI]= +12.0 [-4.7, 28.7]** **Additional Outcomes:** medication adherence + hospitalizations + ER visits + changes in meds + number of recommendations made **Summary:** At 3 months follow-up, SBP, DBP and proportion with BP controlled improved mainly in older white patients with uncontrolled blood pressure and dyslipidemia. Improvements were larger for the intervention group than comparison group but only the DBP improvement was statistically significant. Findings should take into consideration study limitations (i.e. lack of information on the sampling frame, recruitment methods, and other population characteristics).

*Results provided in Appendix

References of Included Studies

(60 studies of TBC were identified in the update period. 7 studies were judged to be of limited quality of execution and excluded from all analyses)

Allen JK, Dennison-Himmelfarb CR, Szanton SL, Bone L, Hill MN, Levine DM, et al. Community Outreach and Cardiovascular Health (COACH) Trial: a randomized, controlled trial of nurse practitioner/community health worker cardiovascular disease risk reduction in urban community health centers. Circ Cardiovasc Qual Outcomes 2011;4(6):595-602.

Artinian NT, Flack JM, Nordstrom CK, Hockman EM, Washington OG, Jen KL, et al. Effects of nurse-managed telemonitoring on blood pressure at 12-month follow-up among urban African Americans. Nurs Res 2007;56(5):312-22.

Becker DM, Yanek LR, Johnson WR, Jr., Garrett D, Moy TF, Reynolds SS, et al. Impact of a community-based multiple risk factor intervention on cardiovascular risk in black families with a history of premature coronary disease. Circulation 2005;111(10):1298-304.

Bogner HR, de Vries HF. Integration of depression and hypertension treatment: a pilot, randomized controlled trial. Ann Fam Med 2008;6(4):295-301.

Bosworth HB, Olsen MK, Dudley T, Orr M, Goldstein MK, Datta SK, et al. Patient education and provider decision support to control blood pressure in primary care: a cluster randomized trial. Am Heart J 2009;157(3):450-6.

Bosworth HB, Olsen MK, Grubber JM, Neary AM, Orr MM, Powers BJ, et al. Two self-management interventions to improve hypertension control: a randomized trial. Ann Intern Med 2009;151(10):687-95.

Bosworth HB, Powers BJ, Olsen MK, McCant F, Grubber J, Smith V, et al. Home blood pressure management and improved blood pressure control: results from a randomized controlled trial. Arch Intern Med 2011;171(13):1173-80.

Brennan T, Spettell C, Villagra V, Ofili E, McMahill-Walraven C, Lowy EJ, et al. Disease management to promote blood pressure control among African Americans. Popul Health Manag 2010;13(2):65-72.

Bunting BA, Smith BH, Sutherland SE. The Asheville Project: clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia. J Am Pharm Assoc (2003) 2008;48(1):23-31.

Carter BL, Ardery G, Dawson JD, James PA, Bergus GR, Doucette WR, et al. Physician and pharmacist collaboration to improve blood pressure control. Arch Intern Med 2009;169(21):1996-2002.

Carter BL, Bergus GR, Dawson JD, Farris KB, Doucette WR, Chrischilles EA, et al. A cluster randomized trial to evaluate physician/pharmacist collaboration to improve blood pressure control. J Clin Hypertens (Greenwich) 2008;10(4):260-71.

Chabot I, Moisan J, Gregoire JP, Milot A. Pharmacist intervention program for control of hypertension. Ann Pharmacother 2003;37(9):1186-93.

Chen EH, Thom DH, Hessler DM, Phengrasamy L, Hammer H, Saba G, et al. Using the Teamlet Model to improve chronic care in an academic primary care practice. J Gen Intern Med 2010;25 Suppl 4:S610-4.

Cohen LB, Taveira TH, Khatana SA, Dooley AG, Pirraglia PA, Wu WC. Pharmacist-led shared medical appointments for multiple cardiovascular risk reduction in patients with type 2 diabetes. Diabetes Educ 2011;37(6):801-12.

*Results provided in Appendix

Edelman D, Fredrickson SK, Melnyk SD, Coffman CJ, Jeffreys AS, Datta S, et al. Medical clinics versus usual care for patients with both diabetes and hypertension: a randomized trial. Ann Intern Med 2010;152(11):689-96.

El Fakiri F, Bruijnzeels MA, Uitewaal PJ, Frenken RA, Berg M, Hoes AW. Intensified preventive care to reduce cardiovascular risk in healthcare centres located in deprived neighbourhoods: a randomized controlled trial. Eur J Cardiovasc Prev Rehabil 2008;15(4):488-93.

Erickson SR, Ascione FJ, Kirking DM. Utility of electronic device for medication management in patients with hypertension: a pilot study. J Am Pharm Assoc (2003) 2005;45(1):88-91.

Fiscella K, Volpe E, Winters P, Brown M, Idris A, Harren T. A novel approach to quality improvement in a safety-net practice: concurrent peer review visits. J Natl Med Assoc 2010;102(12):1231-6.

Green BB, Cook AJ, Ralston JD, Fishman PA, Catz SL, Carlson J, et al. Effectiveness of home blood pressure monitoring, Web communication, and pharmacist care on hypertension control: a randomized controlled trial. JAMA 2008;299(24):2857-67.

Haskell WL, Berra K, Arias E, Christopherson D, Clark A, George J, et al. Multifactor cardiovascular disease risk reduction in medically underserved, high-risk patients. Am J Cardiol 2006;98(11):1472-9.

Hennessy S, Leonard CE, Yang W, Kimmel SE, Townsend RR, Wasserstein AG, et al. Effectiveness of a two-part educational intervention to improve hypertension control: a cluster-randomized trial. Pharmacotherapy 2006;26(9):1342-7.

Hicks LS, Sequist TD, Ayanian JZ, Shaykevich S, Fairchild DG, Orav EJ, et al. Impact of computerized decision support on blood pressure management and control: a randomized controlled trial. J Gen Intern Med 2008;23(4):429-41.

Hill MN, Han HR, Dennison CR, Kim MT, Roary MC, Blumenthal RS, et al. Hypertension care and control in underserved urban African American men: behavioral and physiologic outcomes at 36 months. Am J Hypertens 2003;16(11 Pt 1):906-13.

Hunt JS, Siemienczuk J, Pape G, Rozenfeld Y, MacKay J, LeBlanc BH, et al. A randomized controlled trial of team-based care: impact of physician-pharmacist collaboration on uncontrolled hypertension. J Gen Intern Med 2008;23(12):1966-72.

Ishani A, Greer N, Taylor BC, Kubes L, Cole P, Atwood M, et al. Effect of nurse case management compared with usual care on controlling cardiovascular risk factors in patients with diabetes: a randomized controlled trial. Diabetes Care 2011;34(8):1689-94.

Johnson W, Shaya FT, Khanna N, Warrington VO, Rose VA, Yan X, et al. The Baltimore Partnership to Educate and Achieve Control of Hypertension (The BPTEACH Trial): a randomized trial of the effect of education on improving blood pressure control in a largely African American population. J Clin Hypertens (Greenwich) 2011;13(8):563-70.

Katon WJ, Lin EH, Von Korff M, Ciechanowski P, Ludman EJ, Young B, et al. Collaborative care for patients with depression and chronic illnesses. N Engl J Med 2010;363(27):2611-20.

Landon BE, Hicks LS, O'Malley AJ, Lieu TA, Keegan T, McNeil BJ, et al. Improving the management of chronic disease at community health centers. N Engl J Med 2007;356(9):921-34.

Lee JK, Grace KA, Taylor AJ. Effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: a randomized controlled trial. JAMA 2006;296(21):2563-71.

Levine DM, Bone LR, Hill MN, Stallings R, Gelber AC, Barker A, et al. The effectiveness of a community/academic health center partnership in decreasing the level of blood pressure in an urban African-American population. Ethn Dis 2003;13(3):354-61.

*Results provided in Appendix

Litaker D, Mion L, Planavsky L, Kippes C, Mehta N, Frolkis J. Physician - nurse practitioner teams in chronic disease management: the impact on costs, clinical effectiveness, and patients' perception of care. J Interprof Care 2003;17(3):223-37.

Ma J, Berra K, Haskell WL, Klieman L, Hyde S, Smith MW, et al. Case management to reduce risk of cardiovascular disease in a county health care system. Arch Intern Med 2009;169(21):1988-95.

Magid DJ, Ho PM, Olson KL, Brand DW, Welch LK, Snow KE, et al. A multimodal blood pressure control intervention in 3 healthcare systems. Am J Manag Care 2011;17(4):e96-103.

Marquez Contreras E, Vegazo Garcia O, Claros NM, Gil Guillen V, de la Figuera von Wichmann M, Casado Martinez JJ, et al. Efficacy of telephone and mail intervention in patient compliance with antihypertensive drugs in hypertension. ETECUM-HTA study. Blood Press 2005;14(3):151-8.

McLean DL, McAlister FA, Johnson JA, King KM, Makowsky MJ, Jones CA, et al. A randomized trial of the effect of community pharmacist and nurse care on improving blood pressure management in patients with diabetes mellitus: study of cardiovascular risk intervention by pharmacists-hypertension (SCRIP-HTN). Arch Intern Med 2008;168(21):2355-61.

Morgado M, Rolo S, Castelo-Branco M. Pharmacist intervention program to enhance hypertension control: a randomised controlled trial. Int J Clin Pharm 2011;33(1):132-40.

Murray MD, Harris LE, Overhage JM, Zhou XH, Eckert GJ, Smith FE, et al. Failure of computerized treatment suggestions to improve health outcomes of outpatients with uncomplicated hypertension: results of a randomized controlled trial. Pharmacotherapy 2004;24(3):324-37.

New JP, Mason JM, Freemantle N, Teasdale S, Wong L, Bruce NJ, et al. Educational outreach in diabetes to encourage practice nurses to use primary care hypertension and hyperlipidaemia guidelines (EDEN): a randomized controlled trial. Diabet Med 2004;21(6):599-603.

New JP, Mason JM, Freemantle N, Teasdale S, Wong LM, Bruce NJ, et al. Specialist nurse-led intervention to treat and control hypertension and hyperlipidemia in diabetes (SPLINT): a randomized controlled trial. Diabetes Care 2003;26(8):2250-5.

Ogedegbe G, Chaplin W, Schoenthaler A, Statman D, Berger D, Richardson T, et al. A practice-based trial of motivational interviewing and adherence in hypertensive African Americans. Am J Hypertens 2008;21(10):1137-43.

Park MJ, Kim HS, Kim KS. Cellular phone and Internet-based individual intervention on blood pressure and obesity in obese patients with hypertension. Int J Med Inform 2009;78(10):704-10.

Pezzin LE, Feldman PH, Mongoven JM, McDonald MV, Gerber LM, Peng TR. Improving blood pressure control: results of home-based post-acute care interventions. J Gen Intern Med 2011;26(3):280-6.

Planas LG, Crosby KM, Mitchell KD, Farmer KC. Evaluation of a hypertension medication therapy management program in patients with diabetes. J Am Pharm Assoc (2003) 2009;49(2):164-70.

Reid F, Murray P, Storrie M. Implementation of a pharmacist-led clinic for hypertensive patients in primary care--a pilot study. Pharm World Sci 2005;27(3):202-7.

Rinfret S, Lussier MT, Peirce A, Duhamel F, Cossette S, Lalonde L, et al. The impact of a multidisciplinary information technology-supported program on blood pressure control in primary care. Circ Cardiovasc Qual Outcomes 2009;2(3):170-7.

*Results provided in Appendix

Rocco N, Scher K, Basberg B, Yalamanchi S, Baker-Genaw K. Patient-centered plan-of-care tool for improving clinical outcomes. Qual Manag Health Care 2011;20(2):89-97.

Rudd P, Miller NH, Kaufman J, Kraemer HC, Bandura A, Greenwald G, et al. Nurse management for hypertension. A systems approach. Am J Hypertens 2004;17(10):921-7.

Ruppar TM. Randomized pilot study of a behavioral feedback intervention to improve medication adherence in older adults with hypertension. J Cardiovasc Nurs 2010;25(6):470-9.

Schroeder K, Fahey T, Hollinghurst S, Peters TJ. Nurse-led adherence support in hypertension: a randomized controlled trial. Fam Pract 2005;22(2):144-51.

Scisney-Matlock M, Makos G, Saunders T, Jackson F, Steigerwalt S. Comparison of quality-of-hypertension-care indicators for groups treated by physician versus groups treated by physician-nurse team. J Am Acad Nurse Pract 2004;16(1):17-23.

Simpson SH, Majumdar SR, Tsuyuki RT, Lewanczuk RZ, Spooner R, Johnson JA. Effect of adding pharmacists to primary care teams on blood pressure control in patients with type 2 diabetes: a randomized controlled trial. Diabetes Care 2011;34(1):20-6.

Svetkey LP, Pollak KI, Yancy WS, Jr., Dolor RJ, Batch BC, Samsa G, et al. Hypertension improvement project: randomized trial of quality improvement for physicians and lifestyle modification for patients. Hypertension 2009;54(6):1226-33.

Taylor CT, Byrd DC, Krueger K. Improving primary care in rural Alabama with a pharmacy initiative. Am J Health Syst Pharm 2003;60(11):1123-9.

Tobari H, Arimoto T, Shimojo N, Yuhara K, Noda H, Yamagishi K, et al. Physician-pharmacist cooperation program for blood pressure control in patients with hypertension: a randomized-controlled trial. Am J Hypertens 2010;23(10):1144-52.

Tobe SW, Pylypchuk G, Wentworth J, Kiss A, Szalai JP, Perkins N, et al. Effect of nurse-directed hypertension treatment among First Nations people with existing hypertension and diabetes mellitus: the Diabetes Risk Evaluation and Microalbuminuria (DREAM 3) randomized controlled trial. CMAJ 2006;174(9):1267-71.

Ulm K, Huntgeburth U, Gnahn H, Briesenick C, Purner K, Middeke M. Effect of an intensive nurse-managed medical care programme on ambulatory blood pressure in hypertensive patients. Arch Cardiovasc Dis 2010;103(3):142-9.

Wakefield BJ, Holman JE, Ray A, Scherubel M, Adams MR, Hillis SL, et al. Effectiveness of home telehealth in comorbid diabetes and hypertension: a randomized, controlled trial. Telemed J E Health 2011;17(4):254-61.

Wood DA, Kotseva K, Connolly S, Jennings C, Mead A, Jones J, et al. Nurse-coordinated multidisciplinary, family-based cardiovascular disease prevention programme (EUROACTION) for patients with coronary heart disease and asymptomatic individuals at high risk of cardiovascular disease: a paired, cluster-randomised controlled trial. Lancet 2008;371(9629):1999-2012.

Zillich AJ. Hypertension outcomes through blood pressure monitoring and evaluation by pharmacists (HOME study). J Gen Intern Med 2005;20(12):1091.

*Results provided in Appendix

Additional References Related to Included Studies

Bosworth HB, Olsen MK, Dudley T, Orr M, Neary A, Harrelson M, et al. The Take Control of Your Blood pressure (TCYB) study: study design and methodology. Contemp Clin Trials 2007;28(1):33-47.

Bosworth HB, Olsen MK, Gentry P, Orr M, Dudley T, McCant F, et al. Nurse administered telephone intervention for blood pressure control: a patient-tailored multifactorial intervention. Patient Educ Couns 2005;57(1):5-14.

Bosworth HB, Olsen MK, McCant F, Harrelson M, Gentry P, Rose C, et al. Hypertension Intervention Nurse Telemedicine Study (HINTS): testing a multifactorial tailored behavioral/educational and a medication management intervention for blood pressure control. Am Heart J 2007;153(6):918-24.

Cene CW, Yanek LR, Moy TF, Levine DM, Becker LC, Becker DM. Sustainability of a multiple risk factor intervention on cardiovascular disease in high-risk African American families. Ethn Dis 2008;18(2):169-75.

Datta SK, Oddone EZ, Olsen MK, Orr M, McCant F, Gentry P, et al. Economic analysis of a tailored behavioral intervention to improve blood pressure control for primary care patients. Am Heart J 2010;160(2):257-63.

Dennison CR, Post WS, Kim MT, Bone LR, Cohen D, Blumenthal RS, et al. Underserved urban african american men: hypertension trial outcomes and mortality during 5 years. Am J Hypertens 2007;20(2):164-71.

Dolor RJ, Yancy WS, Jr., Owen WF, Matchar DB, Samsa GP, Pollak KI, et al. Hypertension Improvement Project (HIP): study protocol and implementation challenges. Trials 2009;10:13.

Goessens BM, Visseren FL, Sol BG, de Man-van Ginkel JM, van der Graaf Y, Group SS. A randomized, controlled trial for risk factor reduction in patients with symptomatic vascular disease: the multidisciplinary Vascular Prevention by Nurses Study (VENUS). Eur J Cardiovasc Prev Rehabil 2006;13(6):996-1003.

Green BB, Anderson ML, Ralston JD, Catz S, Fishman PA, Cook AJ. Patient ability and willingness to participate in a web-based intervention to improve hypertension control. J Med Internet Res 2011;13(1):e1.

Green BB, Ralston JD, Fishman PA, Catz SL, Cook A, Carlson J, et al. Electronic communications and home blood pressure monitoring (e-BP) study: design, delivery, and evaluation framework. Contemp Clin Trials 2008;29(3):376-95.

Ma J, Lee KV, Berra K, Stafford RS. Implementation of case management to reduce cardiovascular disease risk in the Stanford and San Mateo Heart to Heart randomized controlled trial: study protocol and baseline characteristics. Implement Sci 2006;1:21.

McLean DL, McAlister FA, Johnson JA, King DM, Jones CA, Tsuyuki RT. Improving blood pressure management in patients with diabetes: the design of the SCRIP-*HTN* study. *Can Pharm J.* 2006;139(4):36-39

Ogedegbe G, Schoenthaler A, Richardson T, Lewis L, Belue R, Espinosa E, et al. An RCT of the effect of motivational interviewing on medication adherence in hypertensive African Americans: rationale and design. Contemp Clin Trials 2007;28(2):169-81.
Powers BJ, Olsen MK, Oddone EZ, Bosworth HB. The effect of a hypertension self-management intervention on diabetes and cholesterol control. Am J Med 2009;122(7):639-46.

Rozenfeld Y, Hunt JS. Effect of patient withdrawal on a study evaluating pharmacist management of hypertension. Pharmacotherapy 2006;26(11):1565-71.

*Results provided in Appendix

Von Muenster SJ, Carter BL, Weber CA, Ernst ME, Milchak JL, Steffensmeier JJ, et al. Description of pharmacist interventions during physician-pharmacist co-management of hypertension. Pharm World Sci 2008;30(1):128-35.

Weber CA, Ernst ME, Sezate GS, Zheng S, Carter BL. Pharmacist-physician comanagement of hypertension and reduction in 24-hour ambulatory blood pressures. Arch Intern Med 2010;170(18):1634-9.

Wentzlaff DM, Carter BL, Ardery G, Franciscus CL, Doucette WR, Chrischilles EA, et al. Sustained blood pressure control following discontinuation of a pharmacist intervention. J Clin Hypertens (Greenwich) 2011;13(6):431-7.

*Results provided in Appendix

APPENDIX

Results from Lipid Outcomes Reported in Included Studies*

Author(s)	Outcome Name	Baseline: Mean (SD)	End of Intervention: Mean (SD)	Change in lipid level** (Diff. in diff. of means)
Allen et al. 2008	Total Cholesterol (mg/dL)***	Usual care (n=264): 191.3 (45.0) Intervention (n=261): 199.7 (46.0)	**12 mo.** Usual Care (n=264):184.1 (41.9) Intervention (n=261): 172.7 (44.5)	-19.8 mg/dL
	LDL Cholesterol (mg/dL)	Usual care (n=264): 116.3 (40.5) Intervention (n=261): 121.6 (40)	Usual Care (n=264): 110.6 (36.8) Intervention (n=261): 100.0 (39.2)	-15.9 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=264): 50.9 (13.6) Intervention (n=261): 50.8 (14.7)	Usual Care (n=264): 49.9 (12.9) Intervention (n=261): 49.4 (13.5)	-0.4 mg/dL
	Triglycerides (mg/dL)	Usual care (n=264): 126.8 (71.5) Intervention (n=261): 138.1 (93.4)	Usual Care (n=264):123.1 (72.2) Intervention (n=261): 121.3 (81.6)	-13.1 mg/dL
Becker et al. 2005	LDL Cholesterol (mg/dL)	Usual care (n=167):136.0 (41.0) Intervention (n=196):139.0 (39.0)	**12 mo.** Usual Care (n=167):131.0 (38.0) Intervention (n=196):118.0(40.0)	-16.0 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=168): 54.14 (NR) Intervention (n=196): 53.75 (NR)	Usual care (n=168): 54.14 (NR) Intervention (n=196): 53.75 (NR)	0.0
	Triglycerides (mg/dL)	Usual care (n=168): 121.4 (NR) Intervention (n=196): 130.20 (NR)	Usual Care (n=168): 118.7(NR) Intervention (n=196): 119.6 (NR)	-7.9 mg/dL
Cohen et al. 2011	LDL Cholesterol (mg/dL)	Usual care (n=49): 110.7 (37.2) Intervention (n=50): 96.1 (25.4)	**6mo.** Usual care (n=49): NR Intervention: (n=50): NR	+ 2.13 mg/dL
El Fakiri et al. 2008	Total Cholesterol (mg/dL)	Usual care (n=137): 214.6 (NR) Intervention (n=138): 217.7(NR)	**12 mo.** Usual care (n=137): 201.1 (NR) Intervention (n=138): 203.8 (NR)	-0.4 mg/dL
	LDL Cholesterol (mg/dL)	Usual care (n=137): 129.5 (NR) Intervention (n=138): 132.3 (NR)	Usual care (n=137): 119.1 ((NR) Intervention (n=138): 119.1 (NR)	-2.8 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=137): 50.7 (NR) Intervention (n=138): 48.3 (NR)	Usual care (n=137): 51.8 ((NR) Intervention (n=138): 50.3 (NR)	+0.9 mg/dL
	Triglycerides (mg/dL)	Usual care (n=137): 174.5 (NR) Intervention (n=138): 190.4 (NR)	Usual care (n=137): 159.4 ((NR) Intervention (n=138): 178.0 (NR)	+2.7 mg/dL
Fiscella et al. 2010	LDL Cholesterol (mg/dL)	Usual care (n=153): 142 (29) Intervention (n=93): 147 (29.7)	**12 mo.** Usual care (n=153): 133.8 (2.4) Intervention (n=93): 135.6 (2.9)	-3.2 mg/dL

* Two studies (not shown here), judged to be of limited quality of execution, also reported lipid outcomes but were not included in the analyses.
** For HDL, a positive effect estimate is in the favorable direction. For all other lipid outcomes, a negative effect estimate is in the favorable direction.
*** Lipid measures reported as mmol/L were converted to mg/dL.

Author(s)	Outcome Name	Baseline: Mean (SD)	End of Intervention: Mean (SD)	Change in lipid level** (Diff. in diff. of means)
Haskell et al. 2006	Total Cholesterol*** (mg/dL)	Usual care (n=45): 204.0 (5.7) Intervention (n=96): 206.0 (4.3)	**12 mo.** Usual Care (n=45):197.0 (4.8) Intervention (n=96): 184.0 (3.4)	-15.0 mg/dL
	LDL Cholesterol (mg/dL)	Usual care (n=45): 118.0 (5.3) Intervention (n=96): 121.0 (3.9)	Usual Care (n=45): 115.0 (5.3) Intervention (n=96): 104.0 (2.9)	-14.0 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=45): 47.0 (2.0) Intervention (n=96): 45.0 (1.3)	Usual Care (n=45): 44.0 (1.6) Intervention (n=96): 46.0 (1.2)	+4.0 mg/dL
	Triglycerides (mg/dL)	Usual care (n=45): 200.0 (12.2) Intervention (n=96): 192.0 (12.8)	Usual Care (n=45):200.0 (12.2) Intervention (n=96): 176.0 (7.6)	-29.0 mg/dL
Katon et al. 2010	LDL Cholesterol (mg/dL)	Usual care (n=106): 109.4 (36.7) Intervention (n=105): 106.8 (35.4)	**12 mo.** Usual care (n=106): 101.4 (36.6) Intervention (n=105): 91.9 (36.7)	-6.9 mg/dL
Lee et al. 2006	LDL Cholesterol (mg/dL)	Usual care (n=76): 98.4 (33.6) Intervention (n=83): 91.6 (30.5)	**12 mo.** Usual care (n=57): 88.4 (21.0) Intervention (n=64): 87.5 (24.2)	+3.0 mg/dL
Litaker et al. 2003	Total Cholesterol (mg/dL)	Usual care (n=78): 211.0 (37.0) Intervention (n=79): 212.0 (43.0)	**12 mo.** Usual care (n=78): NR Intervention (n=79): NR	-0.9 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=78): 211.0 (37.0) Intervention (n=79): 212.0 (43.0)	Usual care (n=78): NR Intervention (n=79): NR	+2.6 mg/dL
Ma et al. 2009	Total Cholesterol (mg/dL)	Usual care (n=207): 192.7 (42.4) Intervention (n=212): 187.7 (39.7)	**15 mo.** Usual Care (n=167):184.1 (41.9) Intervention (n=166): 172.7(44.5)	-0.7 mg/dL
	LDL Cholesterol (mg/dL)	Usual care (n=207): 104.2 (31.8) Intervention (n=212): 104.2 (33.6)	Usual Care (n=147): NR Intervention (n=145): NR	-4.3 mg/dL
	HDL Cholesterol (mg/dL)	Usual care (n=207): 46.3 (12.1) Intervention (n=212): 45.0 (12.2)	Usual Care (n=163): NR Intervention (n=164): NR	+1.6 mg/dL
	Triglycerides (mg/dL)	Usual care (n=207): 205.5 (110.1) Intervention (n=212): 196.4 (101.1)	Usual Care (n=165): NR Intervention (n=163): NR	+6.7 mg/dL

** For HDL, a positive effect estimate is in the favorable direction. For all other lipid outcomes, a negative effect estimate is in the favorable direction.
*** Lipid measures reported as mmol/L were converted to mg/dL.

Author(s)	Outcome Name	Baseline: Mean (SD)	End of Intervention: Mean (SD)	Change in lipid level** (Diff. in diff. of means)
New et al. 2003	Total Cholesterol (mg/dL)	Usual care (n=338): 224.3 (NR) Intervention (n=345): 224.3 (NR)	**12 mo.** Usual care (n=338): 201.1 (NR) Intervention (n=345): 189.5 (NR)	-11.6 mg/dL
Powers et al. 2009 (Bosworth et al. 2009)	LDL Cholesterol (mg/dL)	Usual care (n=259): 109.0 (2.2) Intervention (n=269): 110.8 (2.1)	**24 mo.** Usual care (n=259): 103.9 (2.0) Intervention (n=269): 106.5 (2.0)	+0.9 mg/dL
Rocco et al. 2011	LDL Cholesterol (mg/dL)	Usual care (n=517): NR Intervention (n=593): NR	**6 mo.** Usual care (n=517): NR Intervention (n=593): NR	-6.6 mg/dL
Author(s)	**Outcome Name**	**Baseline: Proportion controlled**	**End of Intervention: Proportion controlled**	**Change in proportion with Lipid parameter(s) controlled (Absolute pct pt change)**
Becker et al. 2005	Proportion with LDL Cholesterol controlled (%)	Usual care (n=167): 38.0 Intervention (n=196): 39.0	**12 mo.** Usual care (n=338): 47.0 Intervention (n=345): 67.0	+19 pct. pts.
Chen et al. 2010	Proportion with LDL Cholesterol controlled (%)	Usual care (n=395): 52.5 Intervention (146): 49.1%	**12 mo.** Usual care (n=395): 58.8 Intervention (n=146): 58.6	+3.20 pct. pts
Cohen et al. 2011	Proportion with LDL Cholesterol controlled (%)	Usual care (n=49): 46.9 Intervention (n=50): 68.0	**6 mo.** Usual care (n=49): 65.3 Intervention (n=50): 82.0	-4.4 pct. pts.
Hill et al. 2003	Proportion with Total Cholesterol controlled (%)	Usual care (n=106): 70.0 Intervention (n=125): 68.0	**36 mo.** Usual Care (n=106): 61.0 Intervention (n=125): 66.0	+7.0 pct. pts.
	Proportion with HDL Cholesterol controlled (%)	Usual care (n=106): 64.0 Intervention (n=125): 72.0	Usual Care (n=106): 82.0 Intervention (n=125): 84.0	-6.0 pct. pts.
Ishani et al. 2011	Proportion with LDL controlled (%)	Total sample = 290 Usual care (n=NR): 52.2 (NR) Intervention (n=NR): 52.2 (NR)	**12 mo.** Usual care (n=NR): 55.4 Intervention (n=NR): 57.6	+2.2 pct. pts.
New et al. 2003	Proportion with Total Cholesterol controlled (%)	Usual care (n=338): 0 Intervention (n=345): 0	**12 mo.** Usual care (n=338): 40.3 Intervention (n=345): 53.3	+13.0 pct. pts.
Wood et al. 2008	Proportion with Total Cholesterol controlled (%)	Usual care (n=306): 31.0 Intervention (n=1089): 23.0	**12 mo.** Usual care (n=937): 31.0 Intervention (n=965): 36.0	+13.0 pct. pts.
	Proportion with LDL Cholesterol controlled (%)	Usual care (n=295): 37.0 Intervention (n=1053): 28.0	**12 mo.** Usual care (n=338): 35.0 Intervention (n=345): 45.0	+19.0 pct. pts.

** For HDL, a positive effect estimate is in the favorable direction. For all other lipid outcomes, a negative effect estimate is in the favorable direction.
*** Lipid measures reported as mmol/L were converted to mg/dL.

Results from Diabetes Outcomes Reported in Included Studies*

Author(s)	Outcome Name	Baseline: Mean (SD)	End of Intervention: Mean (SD)	Change in A1C level (Diff. in diff. of means)
Allen et al. 2011	A1C level (%)	Usual care (n=264): 8.30 (1.90) Intervention (n=261): 8.90 (2.20)	**12mo.** Usual Care (n=264):8.20 (2.10) Intervention (n=261): 8.30 (2.20)	-0.50%
Cohen et al. 2011	A1C level (%)	Usual care (n=49): 8.1 (1.4) Intervention (n=50): 7.8 (1.0)	**6mo.** Usual care (n=49): NR Intervention (n=50): NR	-0.21%
Edelman et al. 2010	A1C level (%)	Usual care (n=106): 8.80 (NR) Intervention (n=133): 8.60 (NR)	**13mo.** Usual Care (n=106): 8.60 (NR) Intervention (n=133): 8.30 (NR)	-0.33%
El Fakiri et al. 2008	A1C level (%)	Usual care (n=138): 6.42 (0.09) Intervention (n=137): 6.49 (0.12)	**12mo.** Usual Care (n=138): 6.38 (0.09) Intervention (n=137): 6.47 (0.11)	+0.03%
Fiscella et al. 2010	A1C level (%)	Usual care (n=117): 8.83 (1.75) Intervention (n=294): 9.31 (2.57)	**12mo.** Usual Care (n=117):8.67 (0.18) Intervention (n=102): 8.93 (0.23)	-0.22%
Katon et al. 2010	A1C level (%)	Usual care (n=106): 8.04 (1.87) Intervention (n=105):8.14 (2.03)	**12mo.** Usual Care (n=106): 7.81 (1.90) Intervention (n=105): 7.33 (1.21)	-0.58%
Litaker et al. 2003	A1C level (%)	Usual care (n=78): 8.50 (1.60) Intervention (n=79): 8.40 (1.40)	**12mo.** Usual Care (n=78):NR Intervention (n=79): NR	-0.48%
Ma et al. 2009	A1C level (%)	Usual care (n=128): 7.70 (1.70) Intervention (n=136): 7.60 (1.70)	**15mo.** Usual Care (n=99):NR Intervention (n=107): NR	-0.32%
Powers et al. 2009 (Bosworth et al. 2009)	A1C level (%)	Usual care (n=294): 7.20 (0.15) Intervention (n=294): 7.54 (0.15)	**24mo.** Usual Care (n=114):7.38 (0.16) Intervention (n=102): 7.26 (0.17)	-0.46%
Rocco et al. 2011	A1C level (%)	Usual care (n=517): NR Intervention (n=593): NR	**6mo.** Usual Care (n=517):NR Intervention (n=593): NR	-0.35%
Tobe et al. 2006	A1C level (%)	Usual care (n=47): 7.70 (1.80) Intervention (n=48): 7.70 (1.80)	**12mo.** Usual Care (n=47):7.7 (1.90) Intervention (n=48): 7.8 (2.10)	+0.01%
Wakefield et al. 2011	A1C level (%)	Usual care (n=107): 7.30 (NR) Intervention (n=93): 7.15 (NR)	**12mo.** Usual Care (n=94): 6.84 (NR) Intervention (n=73): 6.83 (NR)	+0.14%

*Two studies (not shown here), judged to be of limited quality of execution, also reported diabetes outcomes but were not included in the analyses.

Author(s)	Outcome Name	Baseline: Proportion controlled	End of Intervention: Proportion controlled	Change in proportion with A1C controlled (Absolute pct pt change)
Edelman et al. 2010	Proportion with A1C controlled (%)	Usual care (n=106): 0 Intervention (n=133): 0	**13mo.** Usual Care (n=106): 12.0 Intervention (n=133): 17.0	+5.0 pct. pts.
Chen et al. 2010	Proportion with A1c controlled (%)	Usual care (n=395): 25.9 Intervention (n=146): 26.7	**12mo.** Usual care (n=395): 34.8% Intervention (n=146): 36.7	+1.80 pct. pts.
Cohen et al. 2011	Proportion with A1c controlled (%)	Usual care (n=49): 12.2 Intervention (n=50): 16.0	**6mo.** Usual care (n=49): 20.4 Intervention (n=50): 40.8	16.6 pct. pts.
Hill et al. 2003	Proportion with blood glucose >200 mg/dL (%)	Usual care (n=106): 86.0 Intervention (n=125): 93.0	**36mo.** Usual Care (n=106): 84.0 Intervention (n=125): 90.0	-1.0 pct. pts.
Ishani et al. 2011	Proportion with A1C controlled (%)	Usual care (n=139): 0 Intervention (n=139): 0	**12mo.** Usual Care (n=139): 24.6 Intervention (n=139): 40.5	+15.9 pct. pts.
Wood et al. 2008	Proportion with A1C controlled (%)	Usual care (n=88): 72.0 Intervention (n=327): 72.0	**12mo.** Usual Care (n=237): 65.0 Intervention (n=80): 80.0	+15.0 pct. pts.
Author(s)	**Outcome Name**	**Baseline: Mean (SD)**	**End of Intervention: Mean (SD)**	**Change in Blood Glucose (Diff. in diff. of means)**
Becker et al. 2005	Blood glucose (mg/dL)**	Usual care (n=168): 104.0 (NR) Intervention (n=196): 110.0 (NR)	**12mo.** Usual Care (n=168): 109.4 (NR) Intervention (n=196): 107.6 (NR)	-7.70 mg/dL
El Fakiri et al. 2008	Blood glucose (mg/dL)	Usual care (n=138): 115.7 (NR) Intervention (n=137): 120.4 (NR)	**12mo.** Usual Care (n=138): 112.6 (NR) Intervention (n=137): 115.7 (NR)	-1.60mg/dL
Haskell et al. 2006	Blood glucose (mg/dL)	Usual care (n=45): 159.0 (10.7) Intervention (n=96): 140.0 (6.00)	**12mo.** Usual Care (n=45): 149 (7.90) Intervention (n=96): 123 (3.60)	-7.0 mg/dL
Johnson et al. 2011	Blood glucose (mg/dL)	Usual care (n=57): 106 (25.4) Int. Arm 1 (n=43): 140.0 (6.00) Int. Arm 2 (n=249): 124.0 (64.7)	**6mo.** Usual Care (n=49): 102.0 (64.1) Int. Arm 1 (n=34): 125.0 (12.8) Int. Arm 2 (n=223): 110.0 (31.1)	+12.0 mg/dL -10.0 mg/dL
Ma et al. 2009	Blood glucose (mg/dL)	Usual care (n=128): 158.2 (54.2) Intervention (n=136): 161.2 (62.2)	**15mo.** Usual Care (n=102):NR Intervention (n=107): NR	-19.6 mg/dL

* Two studies (not shown here), judged to be of limited quality of execution, also reported diabetes outcomes but were not included in the analyses.
** Blood Glucose measures were converted to mg/dL if reported in mmol/L.