Changing the Paradigm: Strategies for Improved Management of Hypertension

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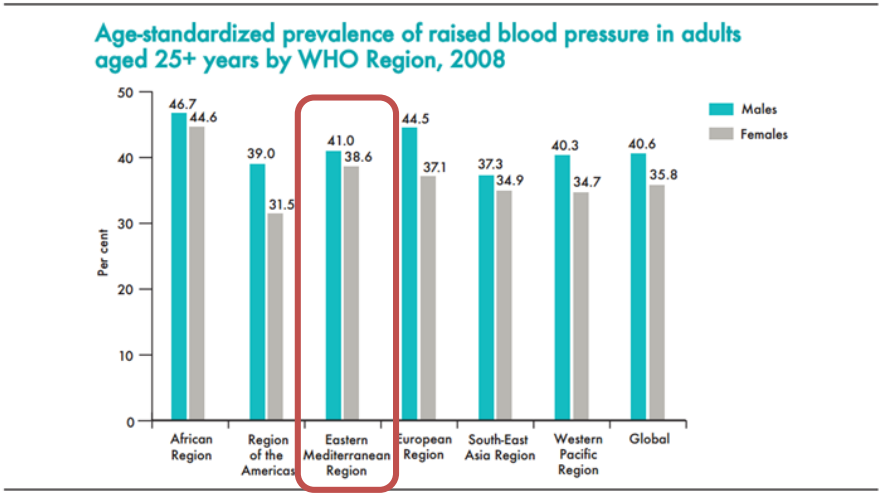
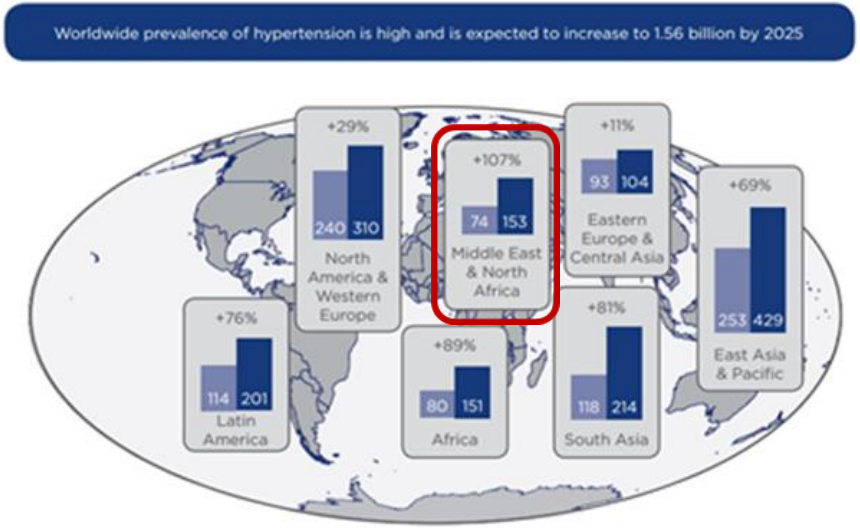
ACC Middle East Conference 2016

Increasing Prevalence of Hypertension by WHO Region



Source: *Global status report on noncommunicable diseases, 2010. Geneva, World Health Organization 2011.*

BLOOD PRESSURE – TAKE CONTROL



Awareness, treatment, and control of hypertension in the Middle East and Africa

Table 1. Prevalence rates of hypertension in adults in selected countries from Africa and the Middle East.

	Hypertension prevalence (%)			CV death rates (per 100,000)[a]	Median age of population (y)[10]
	Men	Women	Overall		
Africa/Middle East					
Egypt[5]	26	27	26	560	25
Iran[9,b]	25	29	27	466	27
Lebanon[8]	–	–	23[c]	453	29
Saudi Arabia[6]	29	24	26	405	22
South Africa[7]	21[b]	21[b]	21[b]	410	24
Selected developed countries for comparison					
Australia	32	21	–	140	37
Germany	60	50	55	211	44
Greece	30	27	28	258	42
Japan	50	43	–	106	44
Spain	46	44	45	137	41
USA	24	23	23	188	37

- Despite prevalence of hypertension in >¼ of the populations, no more than 50% of hypertensive pts aware of condition in any region.
- No more than 1 patient in 3 with hypertension were on therapy.

Current Medical Opinion and Research 2011;27:1223-36

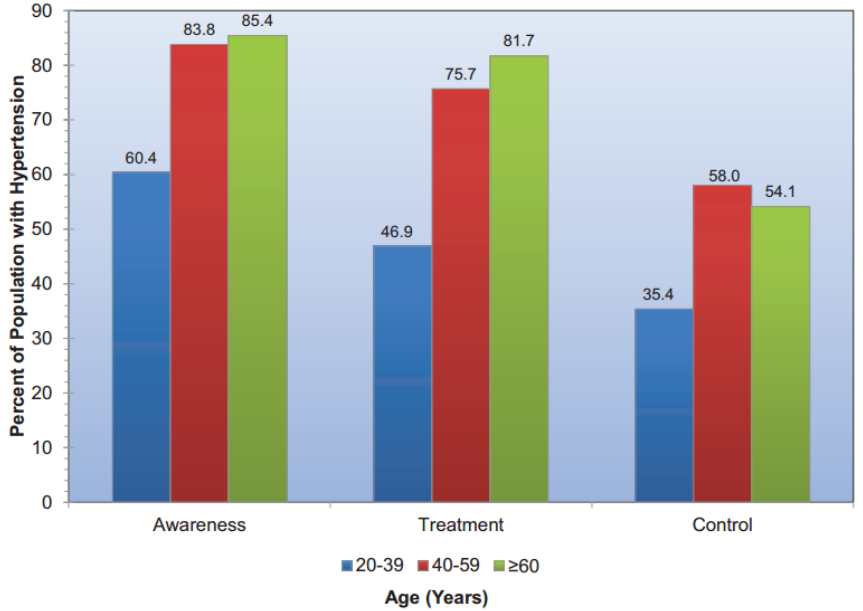
Awareness, Treatment, and Control of Hypertension: Saudi Arabia

- 44.7% known hypertensives confirmed by clinician
  - 71.8% on therapy
  - **37% controlled**
- **55.3% unaware of disease**
  - Higher awareness among females, older adults, eastern region, diabetes, active

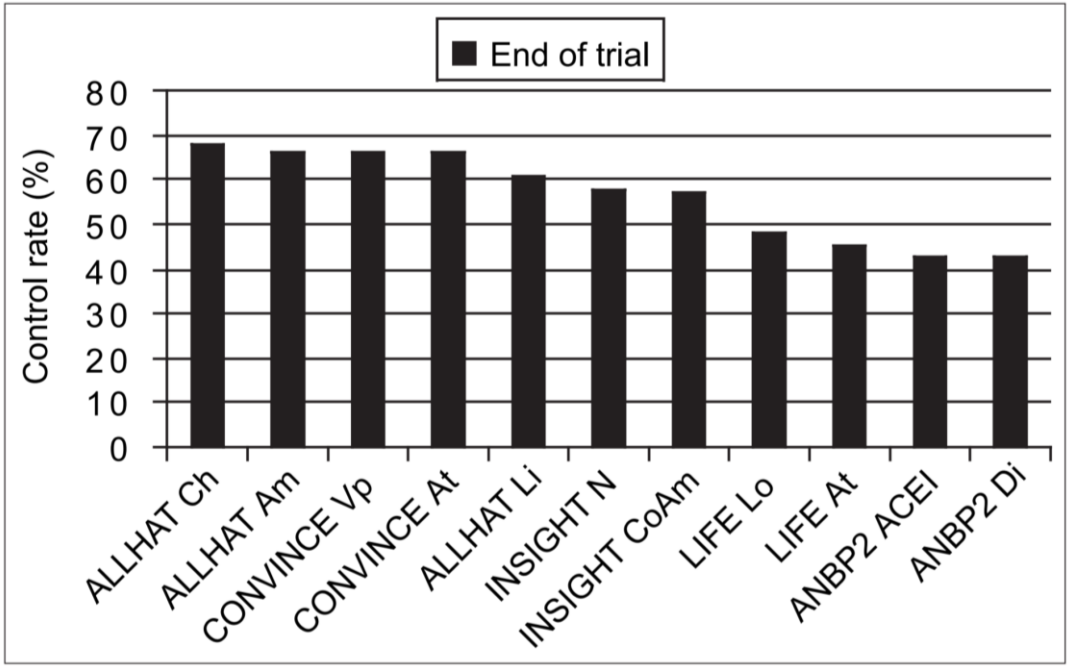
International Journal of Hypertension 2011, doi:10.4061/2011/174135

Awareness, treatment, and control of hypertension in the US 2007-12 NHANES

- Prevalence of hypertension among US adults ≥20 years of age estimated to be 32.6%
- Awareness: 82.7%
- Treatment: 76.5%
- Control: 35.4-58.0%



Hypertension Control Rates in RCTs: Benchmarks for Healthcare Systems?



- Percent of participants achieving BP <140/90 mmHg

J Clin Hypertenson 2006;8:420-6

Global agreement in hypertension management

Global agreement in hypertension management

- Survey by International Society of Hypertension
  - 90 regional affiliated professional societies
  - 77 countries
  - 31 respondents (9 HIC, 17 UMIC, 5 LMIC/LIC)
- **Remarkable consistency across countries from different regions and varying economic conditions**

J Hypertension 2013;31(5):1034-8

Global agreement in hypertension management

- Blood pressure measurement

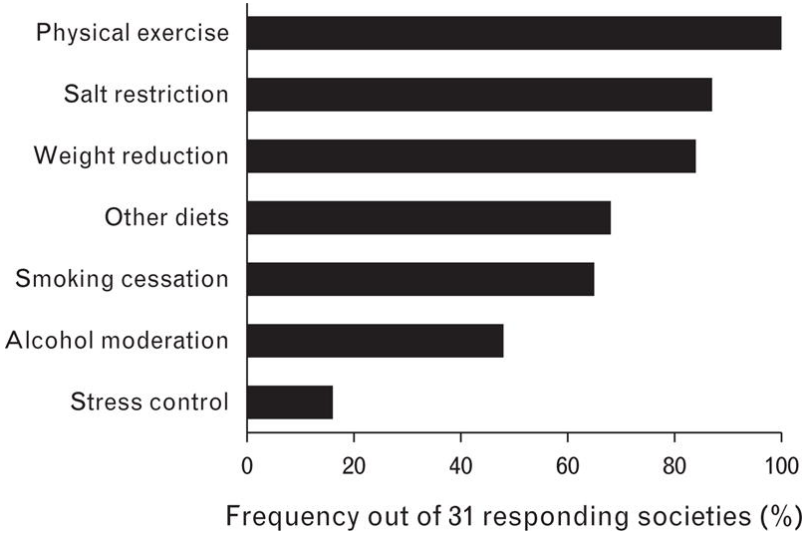
BP measures recommended for decision making	
Clinic BP	27 (87)
Home BP	15 (48)
ABPM	19 (61)

ABPM, ambulatory blood pressure monitoring; BP, indicates blood pressure.
[a]Percentage out of 31 responding societies.

J Hypertension 2013;31(5):1034-8

Global agreement in hypertension management

- Implementation of lifestyle measures

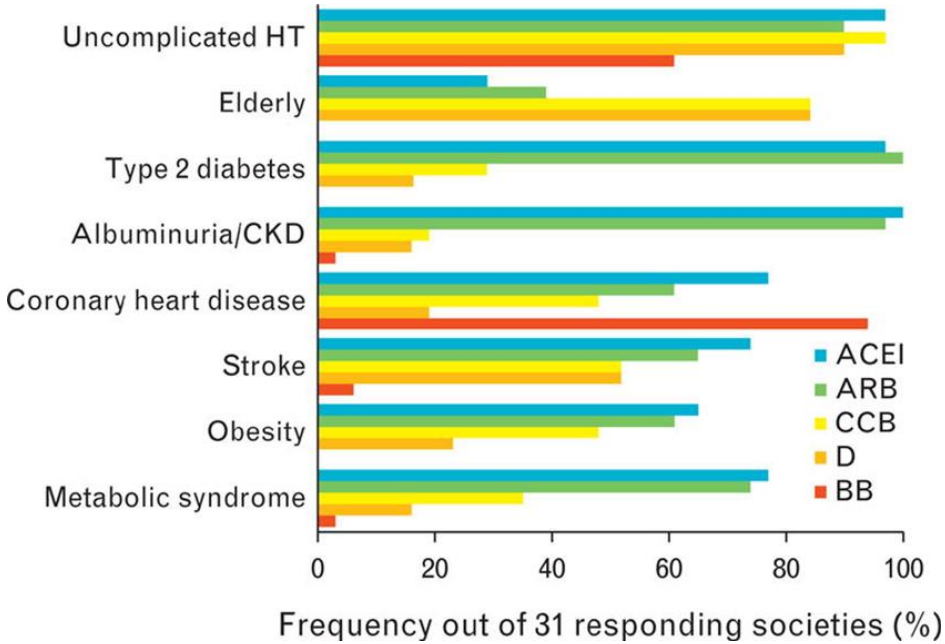


J Hypertension 2013;31(5):1034-8

Global agreement in hypertension management

Medications preferred in various pt populations

- Uncomplicated HTN
  - All used 4 major drug classes
  - Less use of BB
- Elderly
  - Infrequent use of BB
- CHD
  - BB universally used



J Hypertension 2013;31(5):1034-8

Global agreement in hypertension management

Preferred combination drug regimens

Groups	*N* (%)[a]				
	RASI/CCB	RASI/D	CCB/D	CCB/BB	D/BB
Hypertensive patients	27 (87)	22 (71)	5 (16)	6 (19)	3 (10)
Patients with type 2 diabetes	26 (84)	12 (39)	1 (3)	0 (0)	0 (0)

BB, β blocker; CCB, calcium channel blocker; D, diuretic; RASI, indicates renin–angiotensin system inhibitor (angiotensin-converting enzyme inhibitor or angiotensin receptor blocker).
[a]Percentage out of 31 responding societies.

J Hypertension 2013;31(5):1034-8

Global agreement in hypertension management

Blood pressure thresholds and targets for BP-lowering drugs

Groups	Mean mmHg	Most common value mmHg	Most common value *N* (%)[a]	Range mmHg
Thresholds				
Uncomplicated HT	142/90	140/90	28 (90%)	140/90 to 165/90
Elderly	145/90	140/90	18 (58%)	140/90 to 165/85
Coronary heart disease	136/86	140/90	12 (39%)	130/80 to 160/90
		130/80	11 (35%)	
Stroke[b]	137/86	140/90	14 (45%)	130/80 to 150/90
		130/80	8 (26%)	
Type 2 diabetes	132/83	130/80	16 (52%)	130/80 to 140/90
Adolescents[c]	141/89	140/90	11 (35%)	120/80 to 160/90
Blood pressure targets				
Uncomplicated HT	139/88	140/90	22 (71%)	130/80 to 150/85
Elderly	143/89	140/90	15 (48%)	135/85 to 150/90
Coronary heart disease	136/84	130/80	13 (42%)	120/80 to 180/90
		140/90	11 (35%)	
Stroke	138/86	140/90	13 (42%)	120/80 to 180/90
		130/80	9 (29%)	
Type 2 diabetes	131/82	130/80	16 (52%)	120/80 to 140/90
Adolescents[d]	131/83	140/90	5 (16%)	120/70 to 140/90

J Hypertension 2013;31(5):1034-8

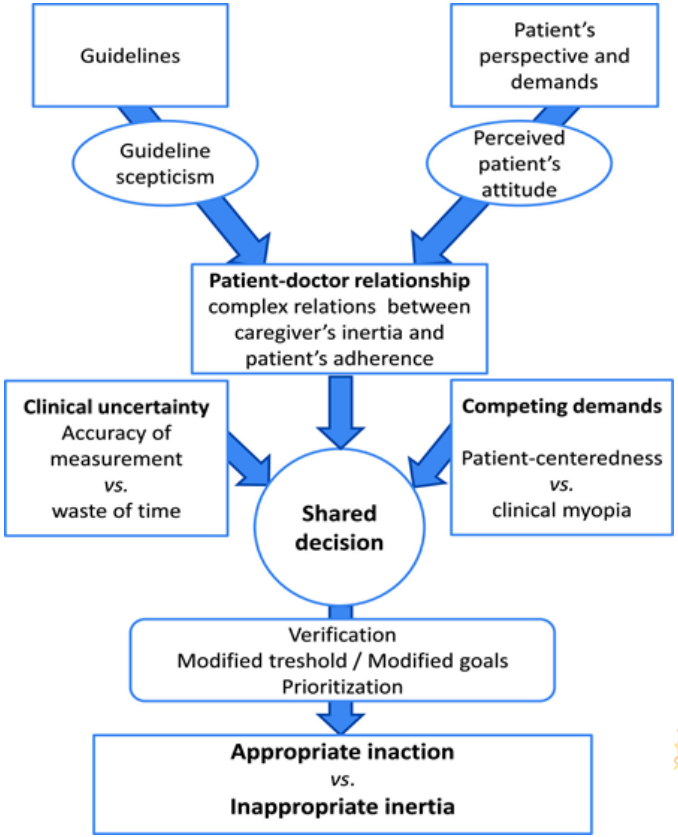
Barriers to Implementation of Evidence-based Guidelines in Hypertension

Clinical Practice Guidelines

- Implementation of clinical practice guidelines is delayed and inconsistent.
- Limited effect on physician behavior change
- It takes on average 17 years for new knowledge to be incorporated into clinical practice.
- **Guidelines do not implement themselves.**

Fischer, et al. *Healthcare*. 2016;4:36-52
Institute of Medicine, Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: National Academy Press; 2001.

Barriers to implementation of evidence-based therapies



- Provider
- Patient
- Systems of care

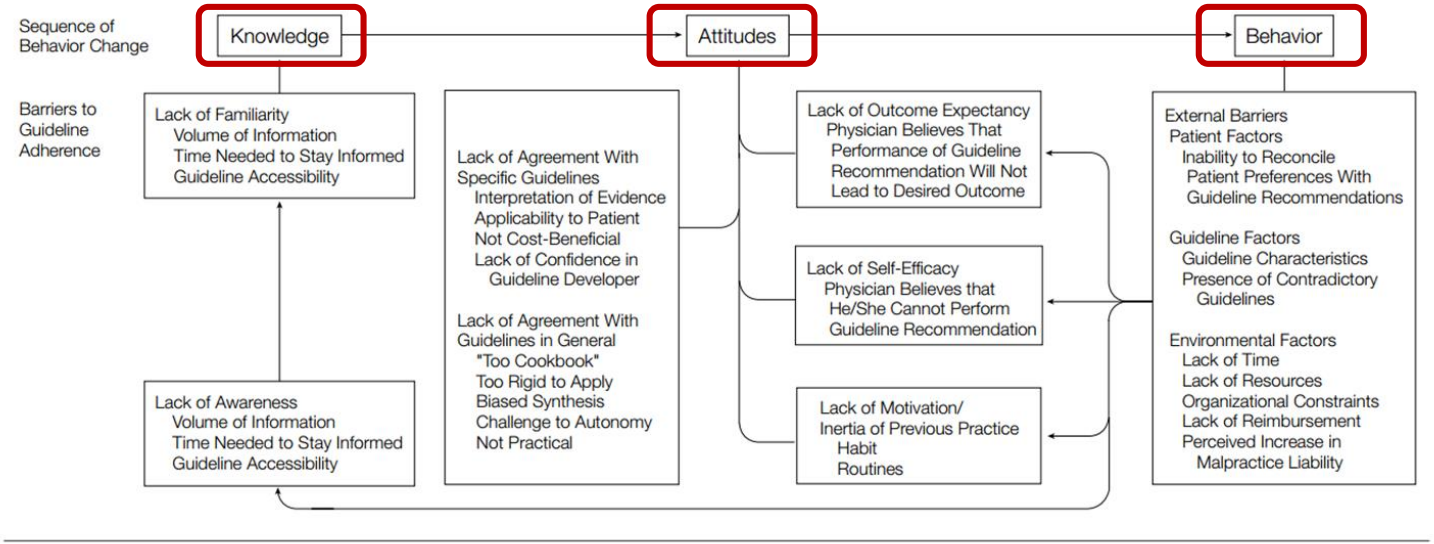
Cabana MD, et al. JAMA. 1999;282:1458-65

Barriers to Guideline Implementation

The Provider

Why don't clinicians follow clinical practice guidelines?

Figure. Barriers to Physician Adherence to Practice Guidelines in Relation to Behavior Change



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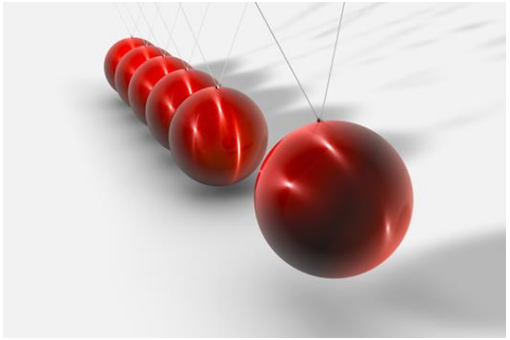
The Provider

Clinical Inertia

Clinical Inertia in CVD Risk Factor Management

- Definition
  - When a provider does not begin or does not intensify treatment when this is deemed necessary according to current clinical practice guidelines
    - Underutilization of therapies recognized as effective, with an adequate or even overwhelming level of proof in preventing the occurrence of… death, MI, CVA.
    - Guidelines recommending **elimination** of an established practice may be even more difficult (vitamins, niacin).



Phillips, et al. Ann Intern Med. 2001:135:825-34
Reach G., Clinical inertia: a critique of medical reason. 2015. Springer-Verlag France, Paris.
Cabana, et l. JAMA. 199;282:1458-65

Clinical Inertia in CVD Risk Factor Management

- Particularly of concern for illnesses in which abnormal values may be the only manifestation of the disease: hypertension, dyslipidemia, diabetes.

- Clinicians must respond to abnormal values in absence of patient symptoms
  - Response must be a high priority during clinical encounters due to the morbidity and mortality associated with ASCVD.

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Reach G., Clinical inertia: a critique of medical reason. 2015. Springer-Verlag France, Paris.
Cabana, et l. JAMA. 199;282:1458-65

Why don’t clinicians follow clinical practice guidelines?

- Reasons most often by providers for failure to titrate BP medications
  - Uncertainty on the reality of elevated blood pressure readings
  - BP readings are improving and it is too soon to make a decision
  - Patient nonadherence
  - Management of hypertension is difficult, especially in diabetic patients
  - Lack of time during appointments that are too short, where hypertension was not a priority

J Hum Hypertens. 2009;23:151–9

Barriers to Guideline Implementation

The Patient

Primary Non-Adherence

- Patients do not get a new prescription filled after the prescription was written (statins)
  - 13% not filled at 30 days
    (*J Gen Intern Med*. 2012;27(1):57-64)
  - 34.1% not filled at 60 days
    (*Am J Pharm Benefits.* 2010;2(2):111-18)

Strategies to Improve Patient Adherence in Management of Hypertension

- Factors associated with poor adherence
  - Ethnic-related factors
  - Change from generic to branded medication
  - Higher co-pay/out-of-pocket medication costs
  - Perceived or actual adverse effects

- Factors associated with higher adherence
  - Primary place/provider of care
  - Each 10-year increase in age
  - Availability of generic alternative
  - Eliminating or reducing co-pay
  - Use of coupons to reduce costs
  - Auto-prescription refill

Strategies to Improve Patient Adherence in Management of Hypertension

- Factors associated with higher adherence
  - Use of PharmD to:
    - Synchronize medication refills
    - Reconcile of medication regimen
    - Reminder of refill/prescription pick-up
    - Review and discuss medications

- Factors associated with higher adherence
  - Meds-to-Bed Programs
  - Discharge review and discussion of medications

Barriers to Guideline Implementation

Systems of Care

Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

- Medical practices organized to respond to the **acute and urgent needs** patients, or symptom-relieving treatments…
- **Less time** to addressing the needs of patients with chronic illness to **prevent** deleterious sequelae.

Prev Chronic Dis 2008;5(3).
http://www.cdc.gov/pcd/issues/2008/jul/07_0218.htm.
Accessed 23 October 2016

Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

- Systems-level interventions
  - Change the way a healthcare system operates
    - Delegating responsibility for key care functions to non-physician members of the **health care team**
    - Putting **systems** in place to identify patients with hypertension and ensure appropriate follow-up with patients
    - Providing regular **feedback** to physicians on how well they manage patients' conditions

Prev Chronic Dis 2008;5(3).
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Accessed 23 October 2016

Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

- Interventions that improve outcomes for hypertension include:
  - **Standardized protocols** that are consistent with evidence-based guidelines
  - **Multidisciplinary clinical care teams**
  - **Specialized clinics** for prevention/treatment, focused management
  - **Health information technology**
    - EMR, automatic prescription systems, paper and electronic reminder **systems** for health care providers
  - **Patient education**

Prev Chronic Dis 2008;5(3). http://www.cdc.gov/pcd/issues/2008/jul/07_0218.htm. Accessed 23 October 2016

The Role of Team-based Care in Successful Management of Hypertension

Team-based Care and Improved Blood Pressure Control

- Definition: adding new staff or changing the roles of existing staff to work with a provider
- Team includes:
  - Patient
  - Provider
  - Nurses, pharmacists, dietitians, social workers, community health workers

Am J Prev Med 2014;47:86-99

Team-based Care and Improved Blood Pressure Control

- **Multidisciplinary team** provides process support and shares the responsibilities of hypertension care
  - Medication management
  - Active patient follow-up
  - Evaluation and support of adherence
  - Self-management support

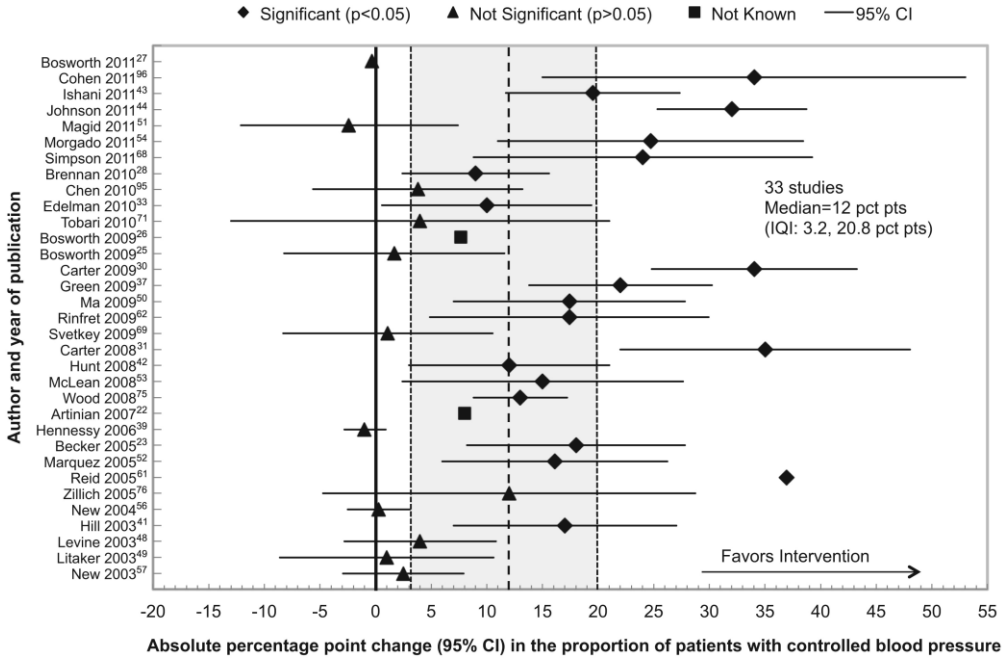
Am J Prev Med 2014;47:86-99

Team-based Care and Improved Blood Pressure Control: Systematic Review

- Proportion of patients with controlled blood pressure (≤140/90 mmHg) increased by a median of 12.0%.
  - Systolic blood pressure decreased by a median of 5.4 mmHg
    - (IQI: 2.0 to 7.2, 44 studies)
  - Diastolic blood pressure decreased by 1.8 mmHg
    - (IQI: 0.7 to 3.2, 38 studies)

Am J Prev Med 2014;47:86-99

Team-based Care and Improved Blood Pressure Control



Am J Prev Med 2014;47:86-99

Team-based Care and Improved Blood Pressure Control

- Also effective in improving other CVD risk factors, including:
  - Diabetes (HbA1c and Blood Glucose levels)
  - Cholesterol (Total and LDL cholesterol)
- Teams with **pharmacists**: greater improvement in control
- Allow non-physician team members to modify regimen independent of the provider, or with provider approval or consultation: greater improvement in control

Am J Prev Med 2014;47:86-99

Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

- Environmental interventions
  - Changes to economic, social, or physical environments
  - Making community resources available
  - Environment that permits healthier choices

Prev Chronic Dis 2008;5(3).
http://www.cdc.gov/pcd/issues/2008/jul/07_0218.htm.
Accessed 23 October 2016

Summary: Changing the Paradigm for Improved Management of Hypertension

- Interventions
  - Provider
  - Patient
  - Team
  - Systems of care
  - Environment