Starting the Conversation on Hypertension Self-Management in Primary Care to Improve Cardiovascular Outcomes

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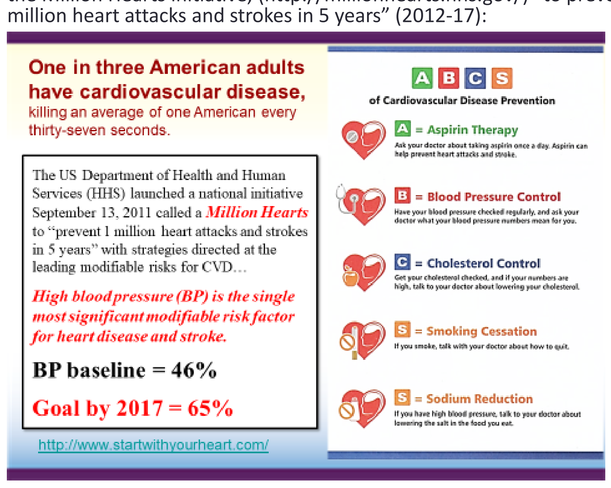
DNP PROJECT ABSTRACT

- **Purpose** of this nurse practitioner led quality improvement (QI) project was to improve the clinical performance in the management of hypertension (HTN) with a focus on self-management support (SMS) among adult patients (18-75 years) at a rural primary care clinic with an exceptionally high rate of cardiovascular disease. The six-month QI initiative was designed with a goal to have 80% or more of the adult patients with a diagnosis of HTN actively setting goals in collaboration with their providers for CVD risk reduction.
- **The study design** was a six month long quality improvement study. Data included a retrospective baseline of meaningful use population data (N = 1210) generated six months prior to the QI study start date and an analysis of the data during the six-month QI study (N = 1409). Interventions included provider and staff QI training along with patient education and lifestyle goal setting for self-management support (SMS) of HTN. All adult patients with a diagnosis of HTN or an elevated BP reading at their office visit were offered the brochures *Starting the Conversation on Blood Pressure* by the NC Prevention Partners(2011) and *Start with Your Heart Prescription for Better Health* from the NC Department of Health and Human Services(2011) in English or Spanish. Questions were answered on HTN and risk reduction by all health care providers throughout the office visit. Community focused, "*Living Healthy*" group support classes were offered to all.
- **S**pecific, **M**easurable, **A**ttainable, **R**ealistic and **T**ime specific (***SMART)*** goal setting and action plans were encouraged and a written self-management plan was given at the end of each office visit. Electronic medical record data was used to compile population statistics for blood pressure (BP), LDL cholesterol, tobacco use, body mass index, and self-management goals monthly throughout the QI study.
- **Results**
  Pre and post results of the QI six month period were compared. The primary objective, > 80% of adults aged 18 to 75 years would have documented self-management goals, was achieved and significantly improved from baseline. ***SMART*** goals discussed included following the recommendations for the Dietary Approaches to Stop Hypertension (DASH) diet, aerobic physical activity, weight loss for healthy body mass index, tobacco cessation, moderate alcohol consumption, stress reduction, medication adherence, home BP monitoring, and, as applicable, blood sugar control. A secondary objective was to see significant improvement in controlled HTN (BP < 140/90) for this population, but this did not occur. A limitation of this QI study was the short length (six months) of observation time.

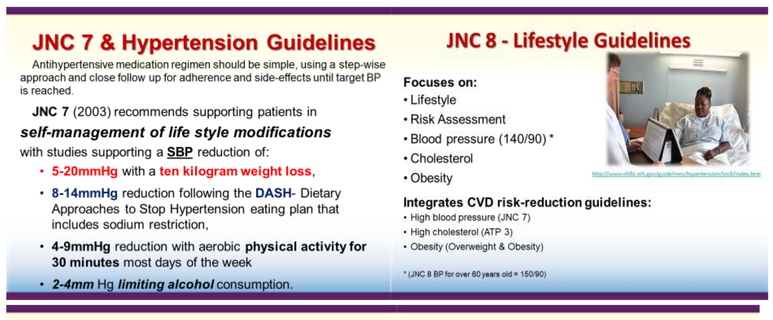
BACKGROUND AND SIGNIFICANCE

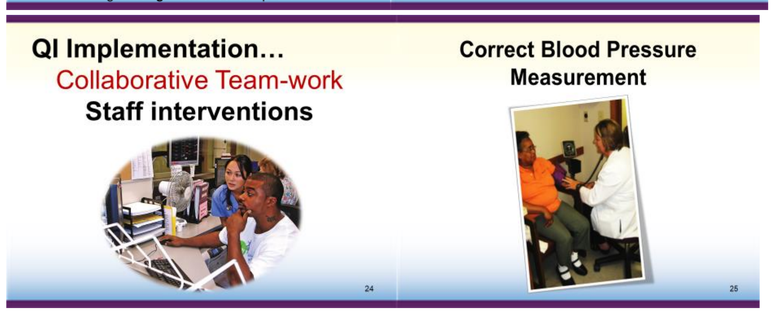
- Cardiovascular disease (CVD) – heart disease and strokes - caused one in three deaths in the USA with an estimated cost to the national health care system of $316 billion per year (AHA, 2017). The American Heart Association (AHA, 2017) states more than 40% of African Americans have hypertension. In 2012 the U.S. Department of Health and Human Services (HHS) launched the Million Hearts initiative, (http://millionhearts.hhs.gov/) "to prevent 1 million heart attacks and strokes in 5 years" (2012-17):

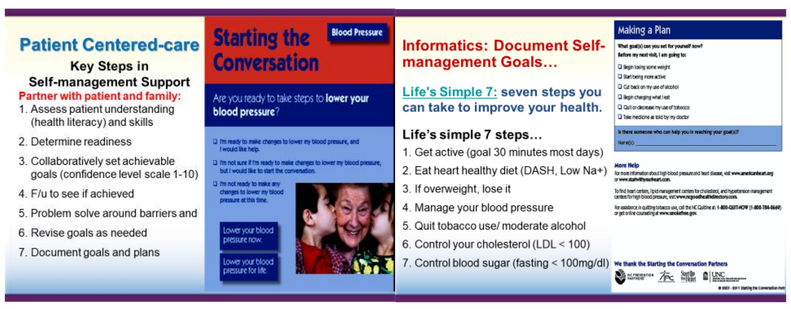


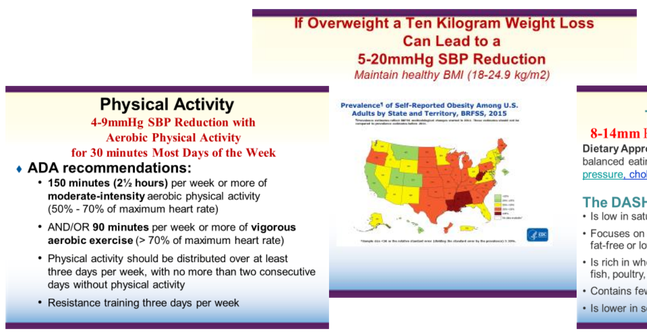
- Strategies were directed at the leading modifiable risks for CVD to support improved outcomes in the "**ABCS**" - **A**spirin for those at risk, **B**lood pressure control, **C**holesterol control, **S**moking cessation and **S**odium reduction in the diet. The focus of this campaign was to empower Americans to make healthy lifestyle choices to reduce CVD risks and for healthcare providers to support their patients in these healthy lifestyles.
- Hypertension (HTN) is the single most independent and modifiable risk factor for cardiovascular disease (CVD), stroke, congestive heart failure, and chronic renal disease (CRD) (Chobanian et al., 2003).
- The Million Hearts campaign set a clinical quality measure for blood pressure control goal at 70% in the clinical population with a diagnosis of hypertension; the measurement was defined as the "percentage of patients 18 to 85 years of age with a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year". In the Southeast Region of the United States, it is currently reported by the Department of Health and Human Services (2016) that only 53% of the of the clinical population has achieved the clinical control blood pressure (BP < 140/90) - a large gap from the 70% goal (http://millionhearts.hhs.gov/data-reports/cqm.html, 2016).

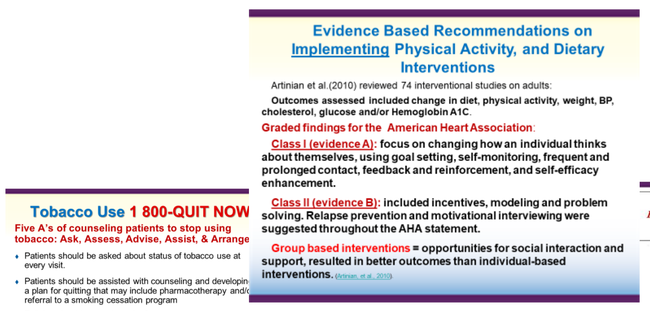
METHODS: QUALITY IMPROVEMENT USING EVIDENCE BASED GUIDELINES



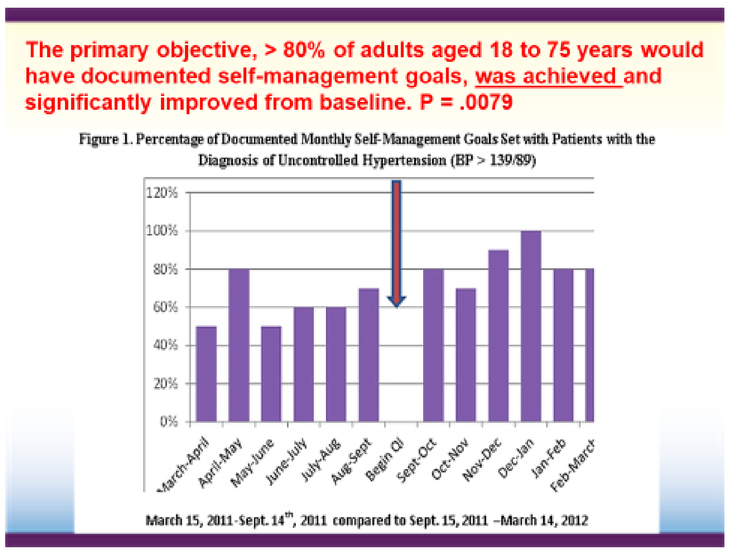








RESULTS



The secondary objective, improvement in controlled HTN (BP < 140/90), did not occur. Controlled BP was 57%. A limitation of this QI study was the short length (six months) of observation time.

Table 1
Meaningful Use Hypertension Z-test results for Six Months Baseline before Quality Improvement Compared to Six Months during Quality Improvement

Patients seen (ages 18-75 years old)	With ICD9 Dx. 401 Essential HTN[a]	March 15,2011- Sept. 14, 2011 Baseline%	Sept 15, 2011 - March 14, 2012 Quality Improve %	Z-value	Two-tailed p-value .05
	BP > 20/10	N =1210	N=1409		
Last entry blood pressure (BP) mmHg systolic and diastolic	BP < 130/80	28.93	28.67	.14	.88
	BP < 140/90	58.76	57.20	.8062	.4201
	BP <160/100	87.36	87.58	-0.1696	.8653
	BP > 159/99	2.31	1.99	.5645	.5724

Body Mass Index: 65 % Classified Obese (BMI > 29.9)

Body mass index (BMI) Kg/m²	Last entry > 1	N =1096	N = 1290		
Under weight	< 18.5	.64	.47	.5605	.5751
Normal	< 25	11.41	11.63	.1677	.8668
Over weight	>24.9 <30	24.18	23.72	.2624	.793
Obese	> 29.9	64.96	65.27	-0.1583	0.8742

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26% Smokers; 82% Advised to Quit During QI

	Smoking not blank	N= 1186	N=1353		
Documented smoking	Yes smokes	26.14	25.57	.3274	.7434
	Current yes	N=310	N=346		
	Advised to quit	77.74	82.08	-1.3881	.1651

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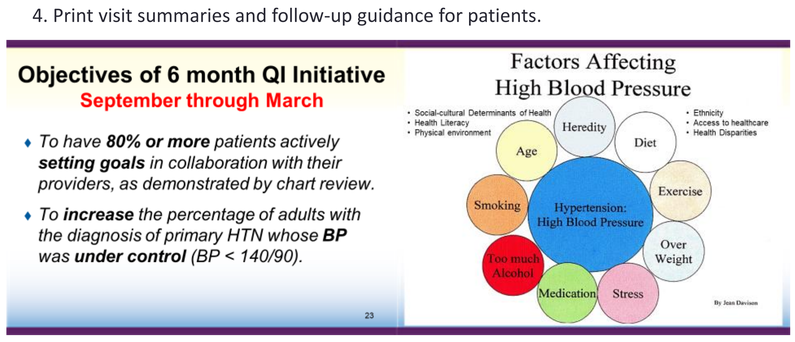
OBJECTIVES – FOCUSED ON MODIFIABLE RISK FACTORS

The objectives of the DNP project were to assist patients with self-management support around modifiable risk factors for HTN in alignment with the Centers for Disease Control and Prevention (CDC, 2013) Hypertension Control Action Steps for Clinicians recommendations as follows:

1. Provide patients who have hypertension with a written self-management plan at the end of each office visit and encourage goal setting.
2. Encourage or provide patient support groups.
3. Use all staff interactions with patients as opportunities to assist in self-management goal-setting and practices.
4. Print visit summaries and follow-up guidance for patients.



RESULTS

- Data included a retrospective baseline of meaningful use population data (N = 1210) generated six months prior to the QI study start date and an analysis of the data during the six-month QI study (N = 1409)

Data Collected after IRB Approval:

Pre-post 6 months QI intervention Design
Dx of essential HTN (401)
18 - 75 years old and not pregnant

- **Self -management Goals set** (yes, no, not documented)
  - **Systolic and Diastolic blood pressures**
    Meaningful use blood pressure less than 140/90
  - **Body Mass Index**
    Meaningful use: weight screening and follow up. If BMI outside parameter, follow up plan is documented.
  - **Tobacco use**
    Meaningful use: Smoking and Tobacco use cessation; (Advised smokers and current tobacco users to quit)

CONCLUSIONS

1: Self Management Goal Setting > 80% was achieved and improved significantly from baseline.

2: With short 6 month intervention – significant improvement in controlled BP < 140/90 was not achieved in the patient population with dx of HTN (n = 1409).

3: In this population there were high rates of tobacco use (26%) with 82% advised to quit. Also high rates of obesity > 65% for the patients with a Dx of HTN.

QI Results Compared to the U.S. Baseline and Million Hearts *Campaign Goals for 2017*

ABCS prevention measures	United States baseline-population[a] (CDC, 2011)	Quality improvement results (September 2011-March 2012)	*Million Hearts[b] 5-year population/clinical target goal 2017*
Aspirin for high risk	47%	49%	65 / 70%
Blood pressure < 140/90mmHg	46%	57%	65 / 70%
Management LDL-C[c]	33%	57% LDL-C <100mg/dL	65 / 70%
Smoking prevalence	20 %	26% yes smoke	17%/--
Cessation counseling or meds	23%	82% advise/assist	
Overweight BMI > 24.9 kg/m²	69%	89%= 24% overweight 65% obese	

Implications for Practice

Health care providers have an important role in meeting the current demand for CVD and HTN management and supporting patients in their self-management to help prevent heart attacks and strokes! More focus needs to be on physical activity and diet to decrease the 65% obesity in this population.

In the US, the prevalence of obesity among adults, estimated using NHANES data, increased from 1999 to 2000 through 2013 to 2014 from 30.5 percent to 37.7 percent.