

2017

# A Multimodal Approach to Hypertension: Behavioral Modifications on a Budget

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## Recommended Citation

Manigrasso, Jayne, "A Multimodal Approach to Hypertension: Behavioral Modifications on a Budget" (2017). *Family Medicine Clerkship Student Projects*. 318.  
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# A MULTIMODAL APPROACH TO HYPERTENSION: BEHAVIORAL MODIFICATIONS ON A BUDGET

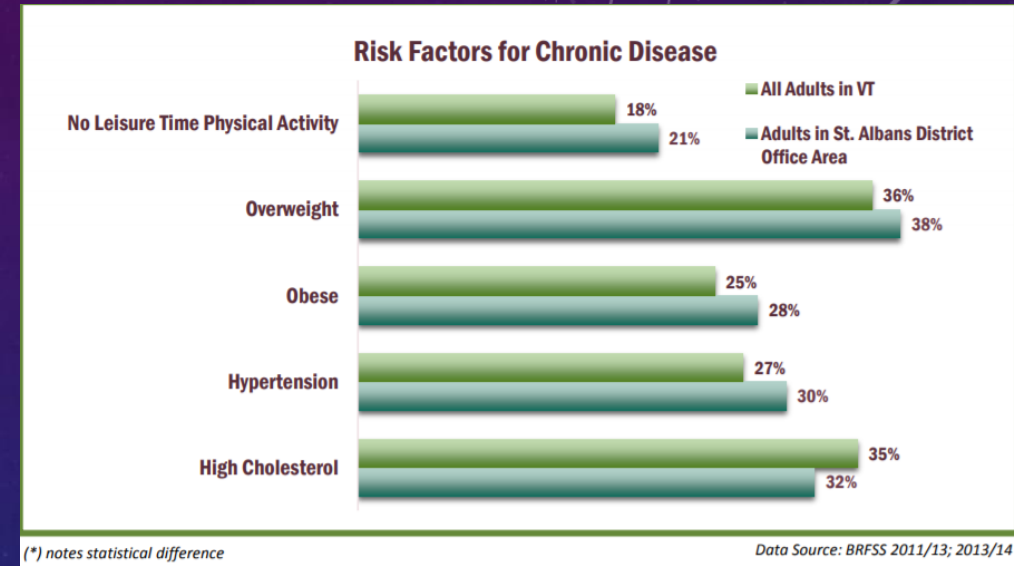
BY JAYNE MANIGRASSO

ROTATION 5 (OCTOBER/NOVEMBER 2017)

PROJECT MENTOR: MAX BAYARD, MD

# PROBLEM IDENTIFICATION/DESCRIPTION OF NEED

- Hypertension is one of the most common diagnoses in the United States
  - approximately 1/3 of Americans >18 y/o have hypertension
  - another 1/3 have prehypertension
- Within the US, only 54% of patients diagnosed with HTN have controlled hypertension
- In 2013, 27% of Vermonters and 30% of St. Albans district residents held a diagnosis of hypertension
- hypertension has modifiable and non-modifiable risk factors
  - important non-modifiable risk factor is age
  - older patient population within a primary care practice means increased amount of hypertension management



## Hypertension Prevalence

Age	Men (%)	Women (%)
20-34	11.1	6.8
35-44	25.1	19.0
45-54	37.1	35.2
55-64	54.0	53.3
65-74	64.0	69.3
75 and older	66.7	78.5
All	34.1	32.7

# COST OF HYPERTENSION AND SEQUELAE

## Nationwide

- Annual cost of hypertension in the United States (2011)= \$46 billion dollars
  - inpatient services
  - outpatient services
  - medications
  - cost of missed work days
- Essential hypertension was the leading primary diagnosis for office visits at 40,323,000 visits nationwide in 2014
  - 4.2% of visits for adult women
  - 5% of all visits for adult men
- From 2013-2014, 46.9% of all adult primary care visits were with a patient with hypertension (non-pregnant adults)
- HTN prevalence is expected to increase to 37% of the population by 2030 with an annual direct medical cost of \$200 billion
- lost productivity/indirect costs are expected to rise to almost \$40 million by 2030

## Franklin County, Vermont:

- 19.7-19.9% of Medicare (Part D) patients within Franklin County were non-adherent with their blood pressure medication regimen in 2014
- per 1000 Medicare beneficiaries (>65 y/o)
  - 1.4-2 patients are admitted to the hospital annually specifically for hypertension
- Sequelae of HTN include coronary vascular disease, heart failure, stroke, and renal failure
- per 1000 Medicare beneficiaries (>65 y/o) in Franklin County
  - 10-13 patients are admitted for heart failure
  - 6-7 patients are admitted for stroke
  - 13-20 are admitted for coronary heart disease
  - 9-15 are admitted for acute myocardial infarction
- admission rates for HTN, heart failure, coronary heart disease, and acute MI are one of the highest in the state
- Per capita cost of Medicare beneficiary with cardiovascular disease in Franklin county:
  - Outpatient (annually): \$3769-\$4545
  - Inpatient (annually): \$444-\$5002

# COMMUNITY PERSPECTIVE

- Max Bayard, MD:

“As a whole, I don’t think people understand how serious hypertension can be. We do make a point to talk about lowering risks of certain events like heart attacks and strokes when we prescribe anti-hypertensives, but I still don’t think people fully grasp it. They have a slightly better understanding of how to treat it (in comparison to what the sequelae are) but this varies based on education level and patient motivation”.

- Matt Miffitt, NP:

“You get a very wide spectrum of patients, but most people really don’t understand what hypertension can do to them. I think because they can’t see it, they don’t take it very seriously until it’s too late. Once they’ve had some sort of event, like a heart attack, then they’re a lot more aware of what can happen to them in the future”.

# INTERVENTION AND METHODOLOGY

- Discussion with local providers regarding barriers to treatment of hypertension and available resources within Franklin County
- Education pamphlet was created to provide a visual adjunct to discussions providers have with their patients on a daily basis
- The pamphlet focuses on educating and empowering patients so they can take on a more active role in treating their chronic illness in an easy and cost effective manner
- Cost effective tactics include free apps, dietary modifications, exercises and cheaper gym options in the area
- The pamphlet also briefly discusses sequelae of hypertension

# RESULTS/RESPONSE

- Educational pamphlets were displayed in waiting room as well as offered within patient visits (hypertension follow-up visits)
- Patients were appreciative of a learning resource that they could bring home and that was specific to Franklin County
- Providers (nurse practitioners, physician assistants, and physicians) within NOTCH offices showed a positive response to the pamphlet
  - Providers were very receptive to learning material due to:
    - cost-conscious interventions
    - focused on behavior modification
    - had local and accessible options that could assist with hypertension management

# EVALUATION OF EFFECTIVENESS/LIMITATIONS

## Effectiveness

- Effectiveness can be evaluated by how many pamphlets are taken; either from the waiting room or within patient visits
- Evaluating the number of hypertension follow-up visits with continually elevated blood pressures
- Assessing the frequency of hypertension follow up visits

## Limitations

- The interventions within these pamphlets require motivation, therefore patients must be in the preparation or action phase of the transtheoretical model of behavior change
- Given that these materials are all written and not verbal, they will not be beneficial for patients who are illiterate or have very low reading levels
- Reading material in English may also be difficult for patients if English is not their first language



# RECOMMENDATIONS FOR FUTURE INTERVENTIONS

- Coordinate with Northwestern Medical Center regarding patient admissions with diagnosis of hypertension or hypertension and a “hypertensive sequelae” diagnosis (stroke, CHF, coronary artery disease, myocardial infarction)
- Collaborate with Northwestern Medical Center to give a community outreach discussion about lifestyle changes related to hypertension
- Develop a “dot phrase” within the EMR to consistently assess specifics of diet and exercise at follow up visits for hypertension
- Assess possibility of discounted gym referrals in Franklin County
- Assess the frequency of nutritionist/dietician referrals by various physicians in Franklin county

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# INTERVIEW CONSENT FORM

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**A Multimodal Approach to Hypertension: Behavioral Modifications on a Budget**

**Jayne Manigrasso**

**11/13/17**

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work.

The interviewer affirms that he/she has explained the nature and purpose of this project.

The interviewee affirms that he/she has consented to this interview.

Yes