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A MULTIMODAL APPROACH TO HYPERTENSION: BEHAVIORAL MODIFICATIONS ON A BUDGET

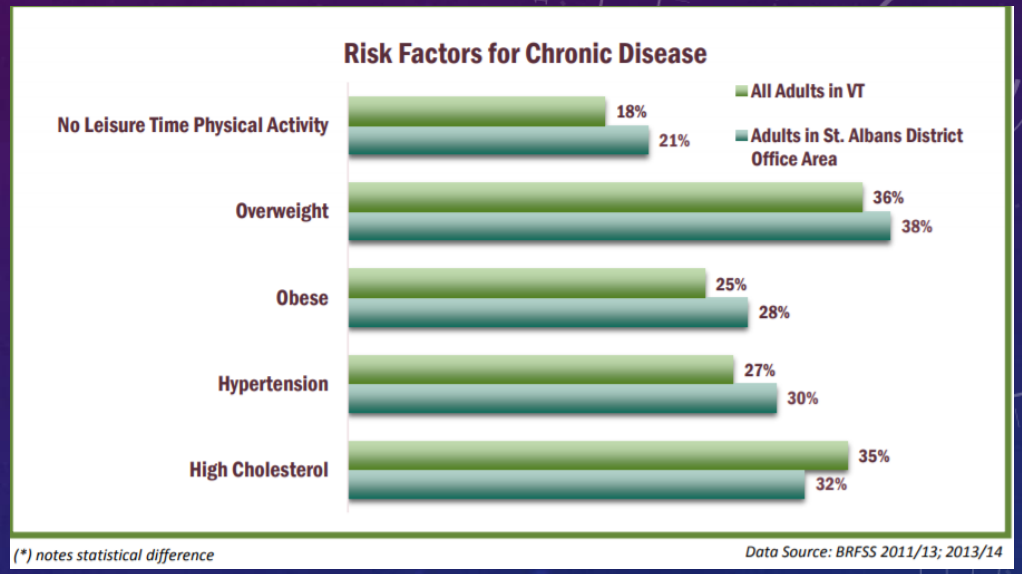
BY JAYNE MANIGRASSO

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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Jayne Manigrasso
11/13/17

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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 ___X__