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Combating Diabetes in Chittenden County: A Healthcare Provider Referral Campaign to Increase Patient Participation in the Vermont Diabetes Prevention Program

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Combating Diabetes in Chittenden County

A Healthcare Provider Referral Campaign to Increase Patient Participation in the Vermont Diabetes Prevention Program

Samantha Magier, M. Eng., MS-III

Thomas Chittenden Health Center

Vermont Department of Health

Mentors: Joe Haddock, MD, Rick Dooley, PA-C

Family Medicine Clerkship Rotation I 3/27/17-4/28/17









Problem Identification: Diabetes Prevention

- As of 2016, diabetes affects more than 29 million people in the United States and is the 7th leading cause of death, up from 26 million in 2010^[1]
- ▶ 1/3 of Americans could develop diabetes by 2050 if this trend continues^[1]
- ▶ 1/10 people in Vermont are diagnosed with either diabetes or prediabetes, with 6% of Vermonters affected by prediabetes and 5% of Chittenden County affected by prediabetes. This accounts for 3% of all deaths in both Vermont and Chittenden County. [2]
- Prediabetes occurs with a blood sugar higher than normal but not at the diagnostic threshold of diabetes
- Prediabetes does not definitively progress to type 2 diabetes if interventions are made, including healthier eating and physical activity that promotes modest weight loss^[2]
- Awareness is the key to prevention: only 9 million out of 86 million Americans with prediabetes are aware of it, meaning every 9/10 do not know they have it^[3]
- Healthy Vermonters 2020 and the 3-4-50 Campaign by the Vermont Department of Health both emphasize diabetes prevention as one of their main public health goals^{[2][4]}
- The CDC has developed evidence-based curricula for lifestyle intervention in prediabetics with intensive individual counseling and motivational support on effective diet, exercise, and behavior modification. [5]
 - ▶ One of these curricula is currently run through the CDC-led National YMCA Diabetes Prevention Program (YDPP)
 - Participation in this program reduces the risk of developing type 2 diabetes by 58% across all ethnic groups and sexes overall and by 71% in individuals over age 60
- The Vermont DPP had 325 participants in 2016, with only 21% (n=70) of those referrals to the program coming from healthcare providers. [6]
- There are 160,531 people in Chittenden county, and with a 5% prevalence of diagnosed prediabetes, that means that 8,026 people in Chittenden county alone have prediabetes and are currently eligible for participation in the YDPP
- Healthcare providers have a unique role in the community of being the voices of health promotion. With the correct provider awareness of the YDPP and patient identification, awareness, and education, an increase in the percentage of YDPP-referring healthcare providers can increase the overall YDPP participation in Chittenden county.

Public Health Cost of Prediabetes in Vermont and Chittenden County

- Although 6% of Vermonters are diagnosed with prediabetes (Figure 1), there are an additional 174,000, or 37.4% of Vermonters, that have prediabetes and are unaware of it^{[6][7]}
 - This means that 60,038 people in Chittenden county have prediabetes, but only 8,026 are diagnosed, and an additional 52,012 people could be diagnosed with prediabetes by their healthcare professional and referred to the YDPP
- ▶ Diabetes lowers life expectancy by up to 15 years and increases the risk of heart disease by 2 to 4 times^[6]
- ▶ Diabetes is the leading cause of kidney failure, lower limb amputations, and adult-onset blindness^[8]
- Medical expenses are 2.3 times higher for those with diabetes^[6]
- The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) invested \$2,656,373 in diabetes-related research projects in Vermont in 2015^[8]
- The Division of Diabetes Translation at the CDC spent \$640,624 on diabetes prevention and educational programs in Vermont in 2016^[8]
- Estimated total financial cost of diabetes in US in 2007 was \$174 billion, including costs of medical care, disability, and premature death^[8]
 - ► Total direct medical expenses for diagnosed and undiagnosed diabetes, prediabetes, and gestational diabetes in Vermont was \$409 million in 2012
 - An additional \$134 million was spent on indirect costs from lost productivity due to diabetes
- The projected prevalence of diabetes is expected to rise to 11% in Vermont by 2050 (Figure 2) [4]

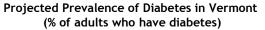
	Vermont		Chittenden County	
Chronic Disease	% Adults Diagnosed	% of All Deaths	% Adults Diagnosed	% of All Deaths
Lung Diseases (Asthma/COPD)	15% (11%/6%)	6%	14% (11%/4%*)	7%
Diabetes/ Pre-Diabetes	13% (8%/6%)	3%	11% (7%/5%)	3%
Cardiovascular Diseases	7%	22%	6%	20%
Cancer	7%	26%	6%	24%

(*) notes statistical difference Note: Percentages for combined chronic disease prevalence account for Vermonters with dual diagnosis. Data Source: BRFSS 2013/14 VT Vital Stats 2014

Figure 1: Chronic Disease Prevalence in VT and Chittenden County

Diabetes and prediabetes cost an estimated \$543 million in Vermont each year.

The serious complications include heart disease, stroke, amputation, end-stage kidney disease, blindness – and death.



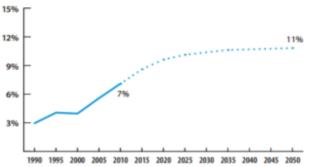


Figure 2: Projected Prevalence of Diabetes in Vermont

Community Perspective

- ▶ Robin Edelman, MS, RD, CDE Vermont Department of Health Diabetes Coordinator
 - "If national predictions from the year 2000 were correct that one out of three children born in the US that year and thereafter would develop diabetes by adulthood, and be the first generation to not outlive their parents, what could be more important than focusing upstream on diabetes prevention for everyone at risk? Young parents with prediabetes can prevent or delay diabetes for themselves and their families. All adults can enhance the quality of their lives by eating better and exercising more. Public health should join forces with their clinical partners to set up Vermonters for more successful, longer lives. We can make it easier for Vermonters to use the YMCA's Diabetes Prevention Program, proven to be effective."
 - She identifies that our health systems are not always set up to effectively provide selfmanagement support for patients, and that this is a large barrier to the community itself engaging patients in the YDPP. Devising a plan to coordinate between community programs and our healthcare providers can bridge this gap.
 - An advocate of the state's 3-4-50 campaign, she states that "unhealthy eating habits and physical inactivity are 2/3 behaviors (the third being smoking) that the DPP addresses that lead to 4 chronic diseases-diabetes, heart disease, cancer, and lung disease-which result in over 50% of Vermont deaths. Prediabetes awareness and action through DPP breaks key links in this 3-4-50 chain."
 - ► The DPP has been studied in academic and community settings. It is invaluable. We need to figure out how to boost participation and take advantage of it.
 - Barriers to current awareness and involvement in the YDPP are:
 - Our smaller population makes it hard to offer and fill enough workshops
 - ▶ We are still at the beginning stages of effective provider engagement.
 - Increased provider education on the value of DPP and subsequent referrals to increase participation are essential.



Support for Project

Vermont State Department of Health
Robin Edelman, Andrea Grayson, Nicole
Lukas

Thomas Chittenden Health Center Dr. Pamela Dawson, Dr. Joe Haddock, Michelle LeDuc, PA-C, Rick Dooley, PA-C

Chittenden County AHEC
Judy Wechsler

Community Perspective

- Mary Anne Kyburz-Ladue, RD, CDE, CD at Thomas Chittenden Health Center (TCHC)
 - ▶ The barriers to prediabetes education/awareness in our community are many.
 - **Socioeconomic:** Highest incidence in low income families. Programs seeking to address lifestyle need to be inexpensive, and since the DPP is free, this is a great opportunity. Lifestyle interventions also need to consider the budgets that families are operating on.
 - ▶ **Geographic access:** We live in a rural area, and having programs available throughout Chittenden County or throughout various counties in the state is paramount. Growing the DPP participation base would be a huge way to drive increased amounts of classes in various locations, subsequently increasing participation further.
 - Awareness: People do not know about it! As providers, we may not be getting the word out there enough, as we are often strapped to get through so many things with patients, and patients with chronic diseases are very time-consuming. A streamlined, fast approach to giving patients this information, like the one presented in this campaign, could counteract that.
 - Many providers also do not know about it!
 - ► The value of the DPP
 - Access to endocrinology is limited and referrals to dieticians, generally not covered by insurance for prediabetes, are still then made
 - Medical Home (MedHome) is currently the only way at TCHC to provide prediabetes counseling
 - Funded through insurance companies to provide social work access and resources
 - ► TCHC decided to apply for MedHome and put the funding towards increasing access to Mary Anne for patient's whose insurance may not cover medical nutrition therapy
 - She provides Diabetes service and education, but when coding for reimbursement under prediabetes, only private insurance will provide coverage. Medicare and Medicaid will only cover counseling for patients with diabetes and renal insufficiency.
 - ▶ She has 3 hours/week for MedHome, which further limits access for prediabetes care at the TCHC practice
 - DPP gives patients the access to counseling regarding diet, exercise, and mental health barriers to overcome prediabetes that practices in Chittenden County and Vermont cannot adequately provide



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Intervention and Methodology

Provider Awareness

- Educate: Disseminate YDPP pamphlet from Vermont Department of Health to all providers at TCHC
- ► Clarify: Arrange for session with Mary Anne Kyburz-Ladue and on-site medical student to discuss patient referral campaign and clarify any questions regarding the YDPP pamphlet
- Patient Awareness and DPP Referral Campaign
 - ► Engage patients: Develop a poster based on the Vermont Department of Health "Do I have prediabetes?" video campaign to be placed in all patient rooms for patient self-evaluation of prediabetes risk^[9]
 - Involve providers: Create an "Rx pad" for providers to fill out for patient referral listing the lab work that details patient eligibility for the YDPP (see Image 1 to right)
 - ▶ Identify patients with prediabetes: Panel query every 6-12 months of all patients matching the patient eligibility guidelines for YDPP participation (see Image 1 to right)
 - ▶ Start the dialogue: Once patients are identified, send standardized letter template to them explaining the diagnosis of prediabetes and the utility of program participation
 - ► Ensure providers screen and refer patients: Program EMR alert for prediabetes screening and DPP referral for eligible patients

DESCRIPTION

- One-year program
 - 16 weekly sessions, then monthly sessions
- Small group, supportive environment
- Classroom based
 - -Can be offered in any community setting
- Learn about healthier eating & increasing physical activity to reduce risk

GOALS

- · Reduce body weight by 7%
- · Increase physical activity to 150 minutes per week

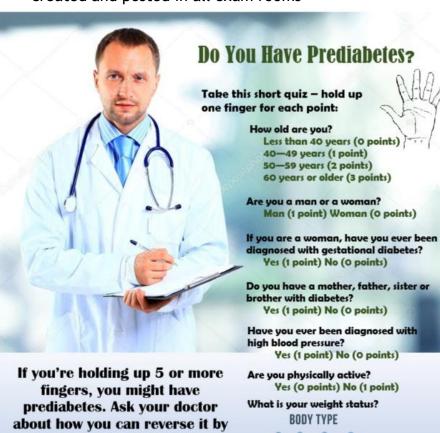
WHO QUALIFIES

- Adults 18+
- Overweight (BMI >25)*
- At risk for or have been diagnosed with PREDIABETES[†]
 - Via a blood test with one of the following results
 - Fasting Plasma Glucose between 100–125 mg/dL
 - 2-hour Plasma Glucose between 140–199 mg/dL
 - A1c between 5.7% and 6.4%
 - Or a previous diagnosis of gestational diabetes
 - If a blood test is not available, a qualifying risk score based on a combination of risk factors family history, age, etc.

Image 1: DPP Description and Eligibility Requirements

Results

Engage patients: Health Center Exam Room Poster created and posted in all exam rooms



taking the YMCA Diabetes Prevention Program Near You.



http://myhealthyvt.org





Involve Providers: Created "Rx Pad" for patient referral to DPP



Rx to Prevent Diabetes

PROV	IDERDATE
PATIE	NT
You ar	e at risk of developing type 2 diabetes based on the following tests:
	A1C:(prediabetes = 5.7% - 6.4%)
	Fasting plasma glucose: (prediabetes = 100 - 125 mg/dL)
	Random plasma glucose:(prediabetes = 140-199 mg/dL)
	Clinical diagnosis of gestational diabetes (GDM) during previous pregnancy
	High blood pressure
	Other
yet dia	betes means your blood glucose (sugar) is higher than normal, but not betes. You can delay or prevent type 2 diabetes through an effective e program.
	programs are FREE in Vermont, and will teach you EASY and FUN STEPs rove your health with a supportive group of people.

AMANDA BIGGS

Take a small step to reduce the likelihood that you develop type 2 diabetes by

joining the YMCA Diabetes Prevention Program. Call Amanda today (with the

information below) to find out when the next workshop is starting.

Medical Home and Self-Management Program Coordinator (802) 847-5468, Fax (802) 847-6545 amanda.biggs@UVMHealth.org









MYHEALTHYVT.ORG

Results

Identify patients with prediabetes: Panel query every 6-12 months of all patients matching the patient eligibility guidelines for YDPP participation. First panel query has already been run by QI Director Rick Dooley, PA-C

- 20

MEASURE

Query Electronic Health Records or patient database every 6–12 months using the following criteria:

A. Inclusion criteria:

- Age ≥18 years and
- Most recent BMI ≥25 (≥22 if Asian) and
- A positive lab test result within previous 12 months:
 - HbA1C 5.7-6.4% (LOINC* code 4548-4) or
 - FPG 100-125 mg/dl (LOINC code 1558-6) or
 - OGTT 140-199 mg/dl (LOIN code 62856-0) or
- History of gestational diabetes (ICD-10: Z86.32)

B. Exclusion criteria:

- Current diagnosis of type 2 diabetes (ICD-10: E11) or
- Current Insulin use

Generate a list of patient names with relevant information

ACT

Use the patient list to:

- A. Contact patients to inform of risk status, explain prediabetes, and share info on diabetes prevention programs, and/or
- B. Send patient contact info to Diabetes Prevention Program's Regional Coordinator (found at myhealthyvt.org). The Regional Coordinator will contact patient directly, and
- C. Flag medical record for patient's next office visit

PARTNER

Discuss program participation at next visit

Start the dialogue: Patients have been identified, and we are in the process of sending a standardized letter template to them explaining the diagnosis of prediabetes and the utility of program participation.

- <<YOUR LETTERHEAD>>
- <<ADDRESS>>
- << PHONE NUMBER>>
- <<DATE>>
- <<PATIENT NAME>>
- <<PATIENT ADDRESS>>

Dr./Mr./Mrs. <<PATIENT LAST NAME>>.

Your health team at << PRACTICE NAME HERE>> wants to tell you about a free service to help make your health better.

Based on our review of your medical chart, you have a condition known as prediabetes. This means your blood sugar is higher than normal, which increases your risk of developing serious health problems including type 2 diabetes, as well as heart disease and stroke.

We have some good news. Our office wants you to know that you may be eligible for a diabetes prevention program run by our partner, the Greater Burlington YMCA. They offer diabetes prevention programs in diverse locations throughout the state that are proven to reduce your risk of developing diabetes and other health problems.

We have sent a referral to <<NAME OF Regional Coordinator>>, and someone will call you to discuss the program, answer any questions you may have, and, if you are interested, enroll you in the program.

Please feel free to give <<NAME OF Regional Coordinator>> a call at <<PHONE NUMBER>>.

-OR-

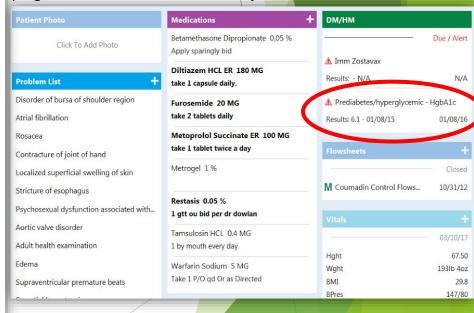
We have sent a referral to the Regional Coordinator's office for this program, and we urge you to call the phone number available at myhealthyvt.org to find the nearest location, learn more about the program, and enroll. On the myhealthyvt.org website, select "learn more" under Diabetes Prevention, and then select "READY TO GET STARTED? FIND A PROGRAM NEAR YOU." Click on the "green balloon" in your area for the Regional Coordinator's contact information.

We hope you will take advantage of this program, which can help prevent you from developing serious health problems.

Sincerely,

Dr. << PHYSICIAN LAST NAME>>

Ensure providers screen and refer patients: EMR alert for prediabetes screening and DPP referral for eligible patients has been programmed into the MEDENT EMR system at TCHC



* LOINC are Logical Observation Identifiers Names and Codes

Evaluation of Effectiveness and Limitations

- **Evaluation of Effectiveness of Intervention Strategies to Increase Participation in YDPP**
 - CDC and NIDDK studies demonstrate evidence that the DPP program itself is effective, so we need to evaluate whether our awareness and referral campaign is effective
 - ▶ Correspond with YDPP regional coordinator every 6 months, who keeps track of referrals coming from different healthcare centers
 - Keep track of the participation and attrition rate of TCHC-referred patients (like a prescription, a referral received by DPP does not
 mean that the patient is going to participate in the program)
 - Perform PDSA on our implementation strategies based on YDPP data regarding referrals from TCHC and make changes accordingly
 - Gauge patient interest through a single question randomly administered to prediabetic patients while they are waiting for their provider in the exam room:
 - If your physician told you that there is a free program to help you manage your health and prevent diabetes, would you be interested in learning more about it?
- Limitations to the Patient Referral Campaign
 - Continual patient commitment to program (see YDPP data from 2014-2016 in Figures 1 and 2 to right) [10]
 - ▶ 67% of Vermonters overall completed the YDPP compared to 59% completion by patients referred by healthcare providers
 - ▶ 5% of Vermonters did not start the YDPP, compared to 10% of patients referred by healthcare providers
 - Increasing demands of providers and adding another task in the management of patients with chronic diseases
 - Patient demographics^[10]
 - ▶ Of those completing the program, 88% were female
 - ▶ The utility of the EMR alert system- many providers ignore alerts
 - Accessibility limitation: until participation increases significantly, more locations will not become available
 - Large undertaking that will need to be continued longitudinally with medical student
 - ▶ Infeasible to implement all of the changes in 5 weeks- standardized letters are in process of being personalized and sent out
 - PDSA cannot be run until 6 months into the process, requiring continuous oversight by medical student and VDH to evaluate the campaign

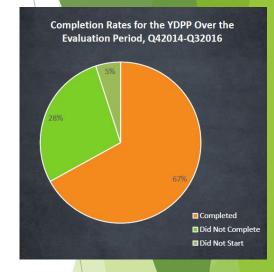
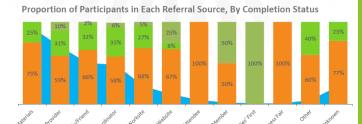


Figure 1: VT YDPP Completion rates 2014-2016



umber of People Referred Completed Did Not Complete Did Not S

Figure 2: Proportion of Participants in Each Referral Source by Completion Status

Recommendations for Future Interventions/Projects

- This campaign is serving as a pilot project with the intent of refining it over the next 6-12 months and then implementing it in other Chittenden County health centers
 - Vermont Department of Health (VDH) and Blueprint for Health will aim to be actively engaged in ongoing quality improvement with on-site medical student to identify strengths and weaknesses of campaign
 - VDH and medical student will communicate with YMCA Regional Coordinator in 6 months and then 12 months to refine campaign for adoption at other health centers
- Increase the number of YMCA's and affiliate sites throughout Vermont providing YDPP workshops and classes to increase patient accessibility
 - Currently there is only one YMCA- The Greater Burlington YMCA- participating in the YDPP
 - ▶ 75% of the 47 involved states have more than one YMCA participating in the program^[6]
 - There are 611 YMCA and 683 non-YMCA sites providing resources and workshops throughout the US, with 184 YMCA's specifically trained for the YDPP^[6]
 - Coordinate with The Edge, with 5 sites throughout Chittenden county, to provide discounts for YDPP members to decrease barrier to physical activity
- Create a targeted intervention for men
 - ▶ 88% of participants that completed the Vermont YDPP were female^[10]
 - Conduct targeted surveys at TCHC or other healthcare centers for men to identify how to increase their participation in this program
- Develop a comprehensive survey to administer to patients to identify their interest in the program and possibly understand how to increase program participation by coordinating with YDPP itself to adapt to Vermonters' feedback
- According to the VDH and community interviews with Robin Edelman and Mary Anne Kyburz-Ladue, health fairs are another opportunity to reach out to the community. Less than 1% of referrals are coming from such wellness fairs. Further projects can target not only refining the healthcare provider referral, but health fair referral, as well.

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Interview Consent Form

INTERVIEW CONSENT FORM Diabetes Prevention Program Patient Referral Campaign Study Samantha Magier 04/19/2017

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.

Mary Anne Kyburz-Ladue:	
Robin Edelman: Robin Eddina	1/26/17
YesX No	,
If not consenting as above: please add the interviewee in Department of Family Medicine information only. Name: Name: Name:	/

If you <u>received</u> informed consent, please upload this page as a separate document entitled: "Name of Project/Interview Consent Form".

If an informed consent was <u>not</u> received, please do not upload this page to ScholarWorks. However, you should include this consent page when submittir your PowerPoint to the Family Medicine Department.