2011 Diabetes Patient Tele-Education Programs Targeting High Diabetes Risk Areas of Virginia

FINAL REPORT

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Acknowledgements

The 2011 Diabetes Tele-education program represents a team effort by several organizations and individuals. In almost all cases these partners have participated in expanding and improving the program over the course of several years, so their effort has been consistent and cumulative in terms of program evolution. We want to acknowledge these efforts and sincerely thank the following organizations or individuals for their many contributions.

- Virginia Department of Health, Office of Minority Health and Health Equity. Funding from VDH in the
 form of annual contracts has made this program possible for the past 5-6 years. The Office of Minority
 Health and Health Equity possesses a strong vision of the educational potential of telemedicine
 technology and through consistent funding, has made it possible for the program to expand and to more
 effectively address statewide disparities in the availability of diabetes patient education.
- <u>University of Virginia Office of Telemedicine</u>. The diabetes tele-educational program depends upon a
 statewide teleconferencing network and technical expertise in order to bring interactive education
 classes to sites across Virginia. All programs are broadcast from the Office of Telemedicine's conference
 room and are actively monitored and supported by a technician from that office. This high level of
 support is essential to creating an educational experience that is free from technical problems and has
 the feel of a face-to-face class.
- <u>Virginia Information Technology Agency (VITA)</u>. VITA has made a substantial contribution to our teleeducation efforts over the years by providing us with additional connectivity to health department sites across the state. They enable us to reach virtually the entire health department teleconferencing system through a single UVA connection.
- University of Virginia Diabetes Education and Management Program. Two of the educators from the
 Diabetes Education and Management Program, Shirley Fleishman, R.N., C.D.E. and Viola Holmes, M.S.,
 R.D., C.D.E. teach all of the classes in the tele-education program. They each can draw on years of
 experience in working with diabetes patients and in-depth knowledge of diabetes management in
 presenting information understandably and answering participants' questions. They invariably and
 deservedly receive extremely high ratings and expressions of thanks from program participants.
- <u>Bay Rivers Telehealth Alliance</u>. This alliance assists the tele-education program in reaching the widely scattered health departments in the high-risk Three Rivers Health District. By promoting the use of telemedicine technology in the area, marketing the classes, and putting a friendly local face on the diabetes tele-education program, they pull in sites and participants that would otherwise not be involved.
- Jennifer Johnson, Certified Wellness Coach, Harry L. Coomes Recreation Center, Abingdon, VA. Over the past few years, we have puzzled over how best to teach the physical activity aspect of diabetes self-management. In the course of implementing a diabetes prevention effort in southwestern Virginia, we met and partnered with Jennifer Johnson. Discussions about tele-education ensued and Jennifer volunteered to do two segments on physical activity in December from her home base at Coomes. Both of these segments involved the use of resistance bands, which we provided free of charge to all participants. These segments were upbeat, high energy, and accessible for beginners. The ability to bring in an instructor from Abingdon to teach a segment of a larger program being broadcast from Charlottesville is a demonstration of the powerful and flexible educational potential of teleconferencing.

Overview of Evaluation Process

This year, we greatly expanded the evaluation process connected with the diabetes tele-education program. A summative report similar to the present document has always been produced at the conclusion of the series of classes. Additionally in 2011, we produced formative reports shortly after each class — 16 reports in all. Each of these summarized the information, ratings, and comments contained in participants' program evaluations and fed it back to the instructors and other partners in the program for the purpose of short-term program improvement. This proved very useful in providing feedback on educational issues and technical problems that arose upon occasion.

Copies of the formative evaluations are available upon request from the program directors at the Virginia Center for Diabetes Professional Education.

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Executive Summary

Thanks to a generous increase in funding from the Virginia Department of Health Office of Minority Health and Health Equity, we were able to increase the number of classes, participants, and sites for 2011. As a result of the increase in classes, we more than doubled the number of participants from 179 in 2010 to 369 in 2011. Overall, 19 sites participated in the programs for 2011. Our largest representation was again from health departments, 15 out of the 19 sites. Bath Community Hospital was the only Critical Access Hospital that participated in this year's series of programs.

The highest levels of class attendance over the eight-month period were in the first two months, May and June, which averaged about 45 participants per class. We think this is primarily due to a buildup of educational need following the end of classes in October, 2010. Henry/Martinsville, Wise and Richmond County Health Departments took advantage of the most class offerings, participating in 12, 11, and 11 classes respectively, from May through December of 2011.

We added two new classes this year, "Diabetes Medications and Glucose Numbers" and "Eat Smart, Get Active". These classes were developed based on evaluation comments and our perception that the basic classes should be supplemented with more in-depth information. We continued to offer the general introduction and overview of diabetes ("Nuts and Bolts") and basic nutrition ("What do I eat") classes.

As in 2010, participants reported that the classes are very useful to them, that they are better able to manage their diabetes as a result of what they learned, and that they are confident in their ability to make specific behavior changes as a result of the classes. We continue to receive valuable comments from staff and family/friends who attend the classes, however we plan to develop a separate means of evaluation for these groups in 2012.

We are also considering a revision in the educational programming for 2012, based on comments and ideas received over the past year for how to improve the class sessions. This would involve streamlining and combining the two existing nutrition programs into a single program, doing the same for the two existing self-management programs, and offering a new program on physical activity and stress management. We would also adopt an eight-month schedule, April through November, 2012, avoiding December which is the most problematic month for attendance. We would offer the new nutrition program each month (8 times) and the new self-management and physical activity/stress management programs on alternating months (4 times each).

Future challenges facing the tele-education program are new site recruitment, site retention, and increased patient attendance at participating sites. We will continue to try to recruit new sites in the Southside area of Virginia where the rates of pre-diabetes and diabetes continue to be high. The challenges in this area are access to functional teleconferencing equipment and adequate staff and leadership to market and coordinate these programs. We are considering traveling to regional areas such as Southside to make formal presentations about the benefits of diabetes tele-education program in rural and underserved areas to district health department directors, community health center directors, area physicians, and hospital administrators and/or directors of education.

Increase in Numbers of Classes, Participants, and Sites for 2011

Thanks to a generous increase in funding from the Virginia Department of Health Office of Minority Health and Health Equity, we were able to increase the number of classes, participants, and sites for 2011. We doubled the number of classes from 8 to 16 and more than doubled the number of participants from 179 in 2010 to 369 in 2011. Also in 2011, we added two additional sites (Henry/Martinsville and Prince Edward County health departments) in an important area of the state, Southside Virginia, which is the highest risk area of the state for diabetes (10.7% - 13.2% of reported cased of diagnosed diabetes in 2008).

Table 1 summarizes the participation by sites and class date. Overall, 19 sites participated in the programs for 2011. This year, we again had only 1 Critical Access Hospital (CAH) represented—Bath Community Hospital—but no Small Hospital Improvement Program (SHIP) hospitals (down from 1 in 2010), despite invitations being sent to all 7 CAH hospitals and most SHIP hospitals. Our largest representation was again from health departments, 15 out of the 19 sites. Also, the two sites with the highest numbers of participants for all classes were health departments (56 at Wise County and 56 at Henry/Martinsville). Two senior citizen centers and one community health center also participated. As was the case last year, we had several sites with low attendance and low participation rates. Also, several sites again used this educational program opportunity to educate staff and several sites used the classes for both patient and staff education.

Chart 1 is a graph derived from Table 1 and highlights some findings important for discussion. First, the highest levels of class attendance over the eight-month period were in the first two months, May and June, which averaged about 45 participants per class. We think this is primarily due to a buildup of educational need following the end of classes in October, 2010. Next, we believe the drop in class attendance seen on July 20 (total class attendance was 7) was primarily because of a late decision to offer new classes and our inability to market these classes well enough in advance—most of the sites were not expecting to have classes offered again until September. Finally, we think the second dip in class attendance seen in December (combined class attendance for December 7th and 21st was 7) was due primarily to the holiday season and busy schedules.

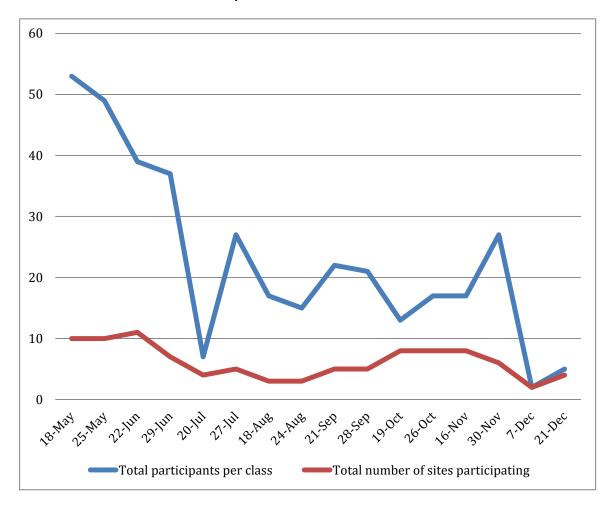
Site participation, also captured in Chart 1, ranged from a high of 11 on June 22 to a low of 2 on December 7. Henry/Martinsville, Wise and Richmond County Health Departments took advantage of the most class offerings, participating in 12, 11, and 11 classes respectively, from May through December of 2011. On average, about 6 sites participated in each broadcast. The explanatory comments offered previously about patient participation in May, June, and December classes would also apply to site participation.

Map 1 shows the representation of sites throughout the state, with recipients located primarily in the southwestern, Southside, and Northern Neck areas of Virginia. Strong local leadership and coordination helped to produce the large number of patients participating in the southwestern area (Wise County and Mountain Empire Older Citizens) and Henry/Martinsville Health Department.

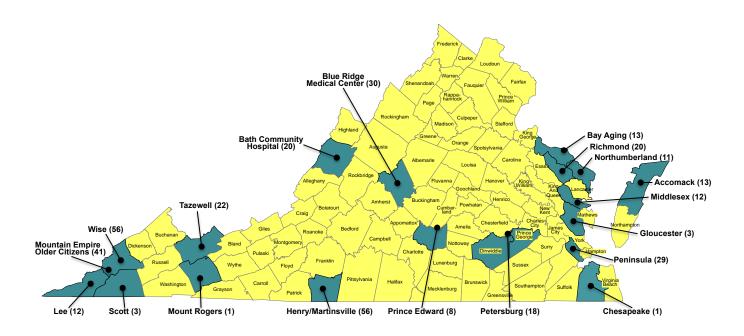
Table 1: Participation by Sites in 2011 Diabetes Tele-education Programs

Site 18 May	75 No.	Z.Jun	29.741	20.34	27.34	13.445	ZR AUS	ri, sex	To Sep	19.00	26.00	16.No.	30,	10 10 No.	ec tr	Oec	Total patients & family per site	Total # times a site participated
Wise County Health Dept	6	7	9	13					3	1	2	5	2	7		1	56	11
Henry/Martinsville Health Dept	1	4	2	1		14	7	7	5	7	4	2	2				56	12
Mountain Empire Older Citizens									11	10			7	13			41	4
Blue Ridge Medical Center	8	9	8	2										2	1		30	6
Peninsula Health Center			5	10			9	5									29	4
Tazewell County Health Dept	11	11															22	2
Richmond County Health Dept	1	2	2		2	4			2	2	1	1	1			2	20	11
Bath Community Hospital		1	2		1	6		3			2	3	2				20	8
Petersburg Health Dept	9	9															18	2
Accomack Health Dept			6	7													13	2
Bay Aging Colonial Beach	13																13	1
Lee County Health Dept	1	4							1	1	1	2	1	1			12	8
Middlesex County Health Dept Northumberland					2	1	1				1	1	1	3	1	1	12	9
County Health Dept Prince Edward	2	1	1	1	2	2					1					1	11	8
County Health Dept Scott County Health	1	1	3	3													8	4
Dept Gloucester County												2	1				3	2
Health Dept Mt. Rogers Health											1	1		1			3	3
District, Marion Chesapeake Health			1														1	1
Dept Total patients &			1												_		1	1
family by date	53	49	40	37	7	27	17	15	22	21	13	17	17	27	2	5	369	
Total staff by date Total number of	3	5	6	5	3	2	3	1	2	1	3	2	2	2	2	0	42	
sites participating Total patient &	10	10	11	7	4	5	3	3	5	5	8	8	8	6	2	4	99	
family hours	106	122.5	80	92.5	14	54	34	30	44	52.5	26	42.5	34	54	4	12.5	803	

Chart 1: Number of Sites and Participants for 2011 Diabetes Tele-education Classes



Map 1: Sites Participating in 2011 Broadcasts and Number of Patients Per Site



Two New Class Offerings for 2011

The schedule and number of classes was changed significantly in 2011, primarily due to increased funding (see Table 2). We added two new classes this year, "Diabetes Medications and Glucose Numbers" and "Eat Smart, Get Active". These classes were developed based on evaluation comments we received from participants. Also, the instructors wanted to provide more in-depth information about diabetes medications and glucose pattern management and lifestyle and weight management focusing on healthier eating strategies, portion sizes, and how to become more physically active. We continued to offer the general introduction and overview of diabetes ("Nuts and Bolts") and basic nutrition ("What do I eat") classes. A description of all 4 classes can be found in Table 3. Because of the additional classes, we increased the course offerings from eight (4 in the Spring and 4 in the Fall) to 16 offerings over an eight-month period from May to December totaling 16 classes and 369 participants.

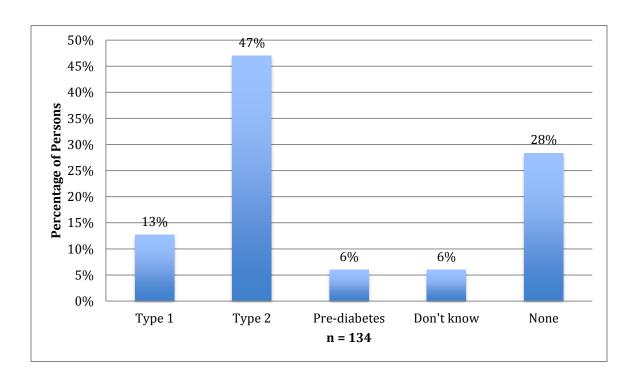
Table 2: Class Offerings for 2011

Name of Class	Instructor Length of Class Number of Offerings				
Nuts and Bolts of Diabetes This workshop covers areas identified by the American Diabetes Association as essential to successfully manage diabetes. Topics include what diabetes is, diabetes complications, staying well, foot care, sick day guidelines, and introductions to nutrition, exercise, and stress management.	Shirley Fleishman, RN, CDE 2 hours 4 per year				
I Have Diabetes, Now What Do I Eat? This workshop provides up-to-date, helpful information participants can readily use to plan meals that will improve their blood glucose control and are heart healthy. Topics include nutrient effects on blood glucose, serving sizes, reading food labels, use of non-nutritive sweeteners, fats, and fiber.	Viola Holmes, RD, MS, CDE 2.5 hours 4 per year				
Diabetes Medications and Glucose Numbers This workshop reviews the various medications available to treat both type 1 and type 2 diabetes, including oral and injectable medications. The different classes of oral medication will be introduced with an explanation of how they work and their benefits and risks. Injectable medications, including insulin and the newer class of injectables called mimetics will also be discussed. Target glucose numbers will be reviewed and case studies of daily glucose patterns will be used to teach how eating, activity, and medication can be adjusted to improve glucose patterns.	Shirley Fleishman, RN, CDE 2 hours 4 per year				
Eat Smart, Get Active This workshop focuses on the "how to" aspects of making changes in eating and activity. The class provides practical tips and ideas for simple, inexpensive ways to eat smarter and get more active. Participants are assisted in finding strategies for making and maintaining permanent lifestyle changes.	Viola Holmes, RD, MS, CDE Jennifer Johnson, BS, Cert. Wellness Coach 2.5 hours 4 per year				

Most Participants have Type 2 Diabetes

In order to better evaluate the demographics of participants attending the diabetes tele-education programs, in July 2011 we began asking them to identify if and what type of diabetes they had and if and what type of diabetes medication they used. As would be expected, many more participants had type 2 than type 1 diabetes (47% vs 13%, repectively). A few reported having pre-diabetes or didn't know what type of diabetes they had (6% in both cases). A substantial portion of the participants (28%) reported having 'none'.

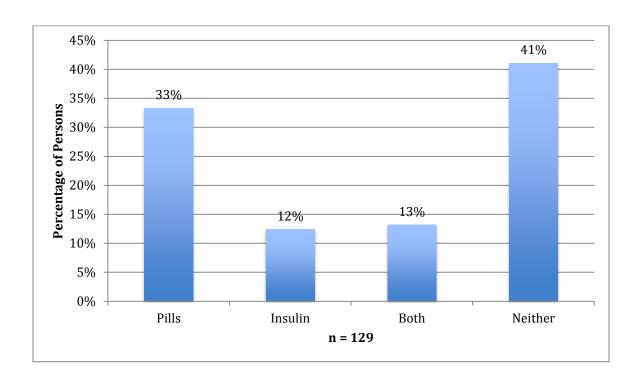
This figure represents a mixture of family members, support persons, and staff or other health care professionals who attended the class sessions.



Most Participants are Either Not on Diabetes Medication or Take Oral Medication

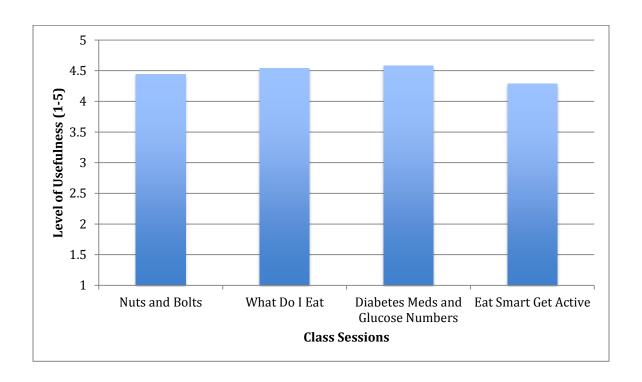
The majority of participants (74%) stated that they either took no medication or oral medication for management of their diabetes. The difficulty in analyzing the 'neither' response is that it includes three different groups of participants – persons with diabetes, family members or support persons, and staff or other health care professionals. In reviewing the evaluation form, we realized that there are several questions on the form that pertain specifically to persons with diabetes (i.e., type of diabetes, type of medication, improved management of diabetes, and behavior changes for self-care of diabetes).

Next year, we will develop a separate evaluation form for staff and/or other health care professionals and have family members and support persons complete only the section of the evaluation form that isn't specific to persons with diabetes.



Class Sessions Are Rated as Being Very Useful

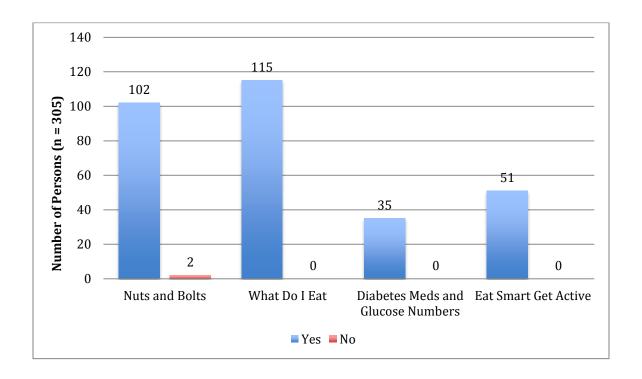
Participants again this year responded very favorably to the usefulness of all the class sessions with an average usefulness rating of 4.47 on a 1-5 scale. In the written comments sections of the evaluation form, they reported that they specifically like the educational handouts, especially the printed copy of the slides so they can follow along with the instructor. In addition, they reported that the instructors are very knowledgeable with good teaching skills and use of interactive teaching techniques (meal planning using plates and food models, demonstrating use of glucose log books, meters and insulin pens, and exercising with resistance bands). They also liked the participant interaction with activities and questions.



Participants Feel They Are Able To Better Manage Their Diabetes as a Result of Education

Almost all (99%) of the participants who had diabetes responded that they felt they were able to better manage their diabetes as a result of what they learned in the tele-education classes. In 3 of the 4 class topics, all participants said they would be better able to manage their diabetes. The discrepancy in numbers between the "Nuts and Bolts" and "What Do I Eat" classes compared to the two new classes is largely due to differences in attendance.

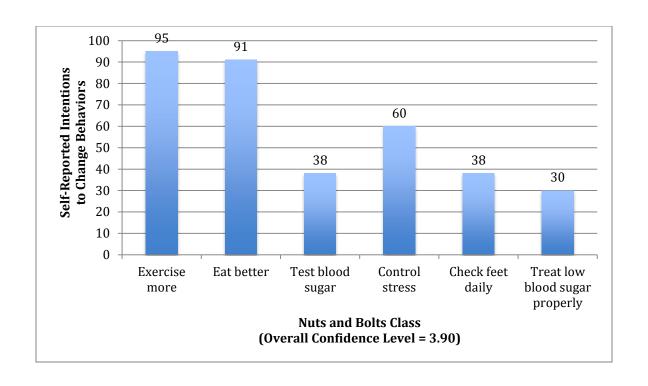
The two new education classes, "Diabetes Medications and Glucose Numbers" and "Eat Smart, Get Active" were offered in July/August and November/December, which were the four months of lowest attendance during the eight-month period of tele-education programming.

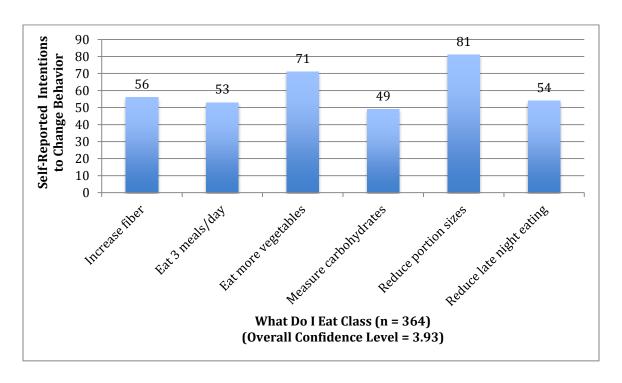


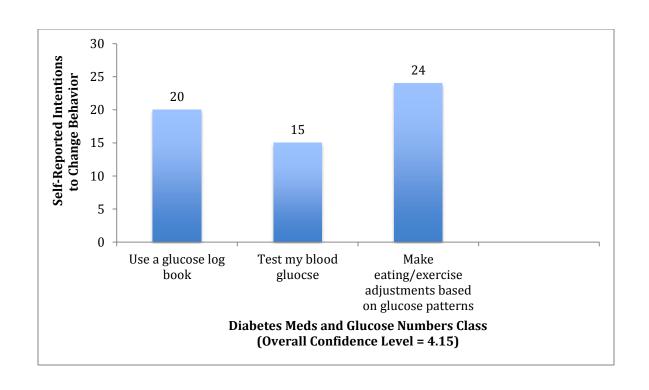
Participants Report Intent to Make Behavior Changes as a Result of Education

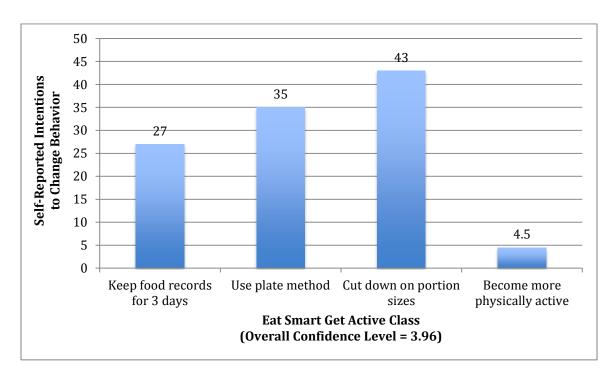
This question was changed on the evaluation form to obtain improved reporting results. In previous years, we asked participants to choose from a multiple choice list all the behavior changes they intended to make as a result of education - the majority checked all the behaviors listed. The question was revised to ask participants to select the 1-3 behaviors they actually intended to make. In summary, the three top self-reported behavior change intentions in each of the four education class topics were as follows:

- "Nuts and Bolts"
 - 1. Exercise more
 - 2. Eat better
 - 3. Control stress
- "What Do I Eat"
 - 1. Reduce portion sizes
 - 2. Eat more vegetables
 - 3. Increase fiber
- "Diabetes Medications and Glucose Numbers"
 - 1. Make eating/exercise adjustments based on glucose patterns
 - 2. Use a glucose log book
 - 3. Test my blood glucose
- "Eat Smart, Get Active"
 - 1. Cut down on portion sizes
 - 2. Keep food records for 3 days
 - 3. Use Plate Method



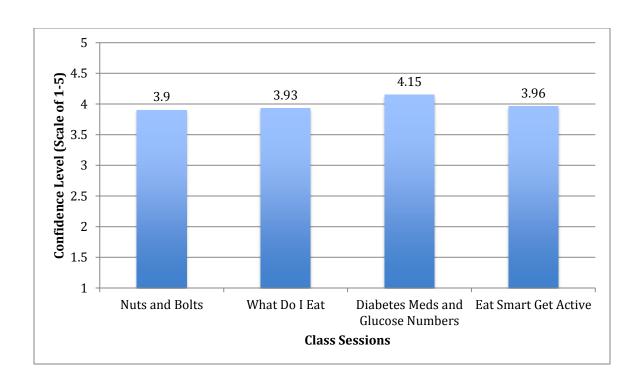






Participants are Confident in Their Ability to Make Behavior Changes

Overall, participants feel confident in their ability to make their self-reported behavior changes, with an average level of 3.95 on a 5-point confidence scale for all four classes.



Implications for Future Programs

Future challenges facing the tele-education program are new site recruitment, site retention, and increased patient attendance at participating sites. We will continue to try to recruit new sites in the Southside area of Virginia where the rates of pre-diabetes and diabetes continue to be high. The challenges in this area are access to functional teleconferencing equipment and adequate staff and leadership to market and coordinate these programs. Although we spent a significant amount of time developing new marketing materials for the educational classes, we need to begin to market earlier than we have in the past and to market the educational program in its entirety.

During the past year, we received useful ideas from several site facilitators about how they marketed these materials in their communities to increase participant attendance. Next year, we will distribute marketing materials and ideas for how to advertise to all the participant sites at least a month in advance of beginning the first educational program. Another idea we have discussed for increasing site participation, especially given that we now have more complete evaluation data with additional outcomes and variables to present, is for us to travel to regional areas and make a formal presentation about the benefits of diabetes tele-education program in rural and underserved areas to district health department directors, community health center directors, area physicians, and hospital administrators and/or directors of education.

After evaluating the program this past year, we discussed plans for revising the educational programming for 2012 with the class instructors. Ideas for improvement include reducing the redundancy of some of the educational material, adding more information about nutrition education/meal planning and physical activity, and adding more interactive opportunities and

patient interaction. The following plan was developed for restructuring the diabetes teleeducation program for 2012.

Plan for Restructuring Diabetes Tele-education Program for 2012

- Offer an 8-month schedule with classes from April through November
 - o April Living Well with Diabetes and Eat Smart with Diabetes
 - May Physical Activity and Stress Management and Eat Smart with Diabetes
 - o June Living Well with Diabetes and Eat Smart with Diabetes
 - o **July** Physical Activity and Stress Management and Eat Smart with Diabetes
 - August Living Well with Diabetes and Eat Smart with Diabetes
 - o September Physical Activity and Stress Management and Eat Smart with Diabetes
 - o October Living Well with Diabetes and Eat Smart with Diabetes
 - November Physical Activity and Stress Management and Eat Smart with Diabetes
- Combine the 2 existing nutrition programs (I Have Diabetes, Now What Do I Eat and Eat Smart, Get Active) into 1 program called 'Eat Smart with Diabetes'
 - Instructor Viola Holmes, MS, RD, CDE
 - o 2 ½ hours
 - o Keep the interactive discussions of label reading, meal planning, and tricky traps
 - Take out the discussion on physical activity
 - Offer monthly over the course of the entire program
- Combine the 2 self-management programs (Nuts and Bolts of Diabetes and Understanding Diabetes Medications and Glucose Numbers) into one program called 'Living Well with Diabetes'
 - Instructor Shirley Fleishman, RN, CDE
 - o 2½ hours
 - Use the information from the basic program plus medications and the interactive discussion on blood glucose pattern management
 - Take out the discussion on stress management
 - Offer three times over the course of the program
- Add a new class on 'Physical Activity and Stress Management'
 - Instructors Shirley Fleishman, RN, CDE and Jennifer Johnson BS, Certified Wellness Coach, Coomes Recreation Center, Abingdon, VA
 - o 1½ hours
 - Shirley Fleishman would do the didactic on exercise and stress management (1 hour) and Jennifer Johnson would do the interactive exercise session (20 minutes); Q/A – 10 minutes
 - Offer three times over the course of the program