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Advancing Excellence in Health Care

## University of Pittsburgh

# Using the Internet to promote evidence-based obesity counseling in the primary care setting

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# USPSTF 2003 Obesity Screening & Treatment Recommendations:

Recommends that clinicians screen all adult patients for obesity & offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults (Grade B)

Concludes that that the evidence is insufficient to recommend for or against the use of lower-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults (Grade I)

# The Translation of Efficacious Lifestyle Interventions into Clinical Practice is Needed

Preventive counseling is lacking in routine primary care practice

<20% adherence for quality indicators involving counseling or education

Less than half of obese adults report that their physician has recommended weight loss

A number of recent studies implementing non-intensive counseling for obesity have been ineffective



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**Goal: Use the Internet to translate a proven lifestyle intervention into practice, to enable better implementation of USPSTF recommendations**

# Basis of Our Intervention: the Diabetes Prevention Program Lifestyle Intervention

58% reduction in Type 2 DM incidence over 2.8 yr

Moderate physical activity & relatively low fat diet,  
consistent with broad recommendations for  
cardiovascular health

Goal weight loss: > 7%

In efficacy trial, delivered via 1:1 counseling

Cost-effective for preventing DM (~\$8800 per QALY),  
but expensive



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**The key challenge in translating the  
DPP lifestyle intervention into  
community settings: Maintain  
intervention integrity while  
reducing cost**



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# Clinical barriers to lifestyle counseling

## Physician Barriers

Need to prioritize acute care

Lack of time (1-minute)

Inadequate Training

## Patient Barriers

Financial concerns

Busy schedules

Travel constraints

## System Barriers

Lack of reimbursement

Inadequate staff/management support

# A variety of strategies have been used to translate the DPP to community settings

	Translational Effort							
	A	B	C	D	E	F	G	H
Shifting counseling to group-based approach	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reducing counseling contact after core curriculum	Yes	No	Yes	Yes	Yes	Yes	No	Yes
Decreasing freq or number of core counseling sessions	No	No	No	Yes	Yes	Yes	No	Yes
Reducing “toolkit”	No	Yes	No	No	No	Yes	Yes	No
Including non-health-professional counselors	Yes	No	No	No	No	No	No	Yes



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# Our Solution: Adapt the intervention for online delivery

Maintain full curriculum

Capitalize on the authority of PCP advice and longevity of the 1<sup>o</sup> care relationship

Expand health-care team to include a virtually-accessed lifestyle expert

Focus the lifestyle coach's time on tailored advice & support

Enable participation at the time & Internet location of choice

Allows for technological innovations



**Online counseling  
can be smoothly  
integrated with  
routine primary  
care**

## **Clinical Process & Resources**



Pt views waiting  
room posters



MD advises  
weight loss &  
makes referral

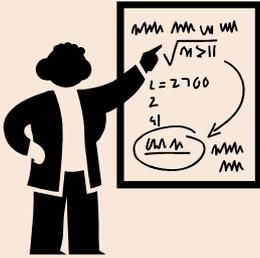


Routine referral  
processing

# Online Counseling Resources



Automated  
online curriculum



Online lifestyle  
coach



Electronic self-  
monitoring tools



Links to  
community  
resources

# Clinical Process & Resources



Pt views waiting  
room posters



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weight loss &  
makes referral

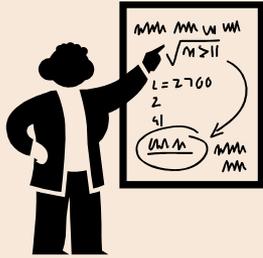


Routine referral  
processing

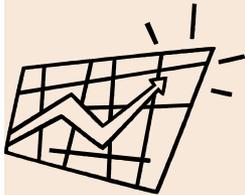
# Online Counseling Resources



Automated online curriculum



Online lifestyle coach



Electronic self-monitoring tools



Links to community resources



# Clinical Process & Resources



Pt views waiting room posters



MD advises weight loss & makes referral



Routine referral processing



Feedback & support at F/U appointment

COACH - Journey Log - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <https://vlm.stage.upmc.com/console/user/Welcome.aspx> Go Links McAfee SiteAdvisor

UPMC HealthTrak UPMC HealthTrak Home UPMC Home

Virtual Lifestyle Management

Home Lessons Workbook Keeping Track Resources Communicate

VLM Home VLM Home Help System Support

Welcome **Ginger Test**  
 Date of birth: 6/6/1981  
 Email: loucksfb@upmc.edu

All My Tasks

Today's Date: 02/04/07

My Pending Tasks	Please Complete By	Status
Lesson 1: Getting started losing weight	02/03	to do

[New Testing User](#) [Main Console](#)

*At the home page, a clipboard displays all pending tasks. Key program components are displayed across the top of the screen.*

VLM - Lesson #1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Audio: "Welcome to the first lesson of the Virtual Lifestyle Management Program. The program is designed to help you establish a healthier eating and physical activity routine, to lose weight, and to help you prevent or better manage diabetes. We hope you enjoy the course, and that participating in the program helps you improve your health."

*Virtual Lifestyle Management (VLM) Lesson 1*  
Getting started losing weight!



Lesson 1: Getting started losing weight Slide 1 of 18 [Next](#) [Exit Lesson](#)

*It includes 16 weekly, then 8 monthly lessons. Clicking on a pending lesson starts the audio lesson, accompanied by supporting images.*

Workbook Review - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Stop Taskbar

Address <https://vlm.stage.upmc.com/console/user/Lessons/VLMLesson6/Slide8r.aspx> Go Links McAfee SiteAdvisor

UPMC HealthTrak

*Virtual Lifestyle Management*

Lesson 6: Being active as a way of life

*Workbook Review*

**Finding time to be active**

<b>When can you set aside 20 to 30 minutes to do an activity you like?</b>	1. <input type="text" value="After work"/>
	2. <input type="text" value="After dinner"/>
	3. <input type="text"/>

Add a new comment for this workbook page

Lesson 6: Being active as a way of life Back Slide 8 of 22 Save Save and Next Exit Lesson

*Lessons include interactive workbook pages. In each lesson, the final workbook page is an “action plan” that the participant commits to for the coming week.*

Keeping Track Homepage - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <https://vlm.stage.upmc.com/console/user/KeepingTrackHomePage.aspx> Go Links McAfee SiteAdvisor

UPMC HealthTrak UPMC HealthTrak Home UPMC Home

Virtual Lifestyle Management

Home Lessons Workbook **Keeping Track** Resources Communicate

Keeping Track VLM Home:: Keeping Track Help System Support

**My Tracking**

Today's Date: 03/29/07

My Pending Tracking	Please Complete By	Status
Complete week's tracking	03/26	to do
Review week's success	03/26	to do
More VLM activity tools	03/26	to do

[Click here to review the lecture: How to Use the Keeping Track Function](#)

**Tracking Tools and Information**

[My Week's Planning Grid](#) ?

[My Past Weeks' History](#) ?

*In the "Keeping Track" section, participants self-monitor weight, diet, and physical activity.*

Today's tracking information:

Grams of fat eaten:

Pedometer Steps:  ?

Specific?

Time

Duration

Intensity

Done?

Pedometer

Additional Activities (Add an activity by clicking the activity method below)

Stretch Resistance Walking Everyday Run Dancing Swim Bike Sports Aerobics Other Equipment

How did today get in the way? ?

Did extreme weather impact the day? Click a weather and/or a temperature. ?



Cloudy



Snowy



Rainy



Very Cold



Very Hot



No Impact

Parts of a Normal Day? ?

Long Day



Sick Family



Traveling



Holiday



Sick Day



Social Event



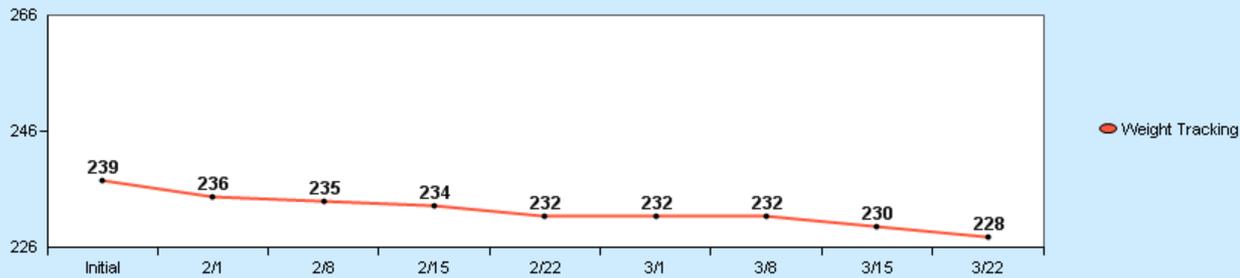
Injury



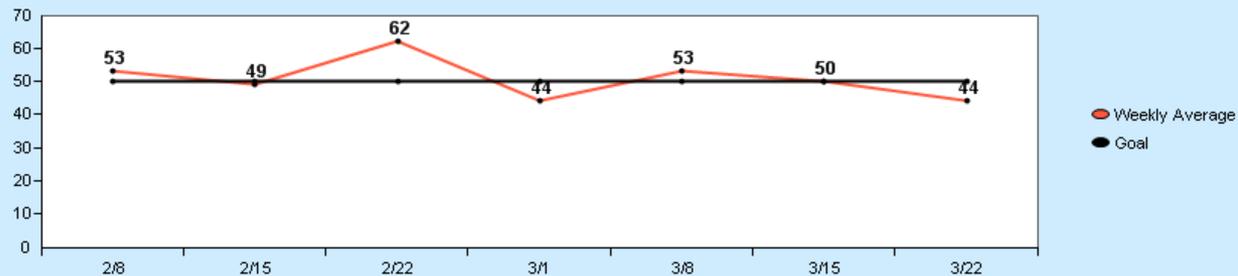
*They enter daily fat & calorie intake, plus pedometer steps. They can also track a wide variety of physical activities, and personal barriers to healthy lifestyles.*

## Your Weekly Summary Graphs

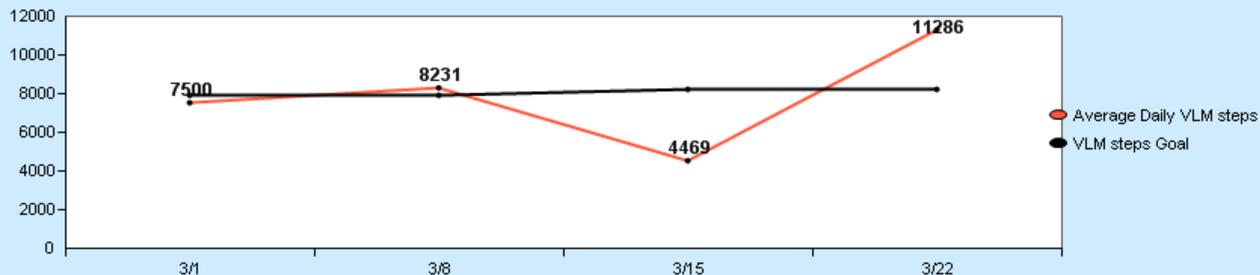
Weight Progress (lbs):



Fat Consumption Progress (grams):



Physical Activity Progress (VLM steps):



*Once a week, participants receive automated emails detailing their progress since the start of the program (shown here), as well daily results from the last week.*

## Virtual Lifestyle Management

[Home](#)[Lessons](#)[Workbook](#)[Keeping Track](#)[Resources](#)[Communicate](#)

### Resources

[VLM Home](#) :: Resources[System Support](#)

#### VLM Handouts:

[Beat the Heat](#)[Calculating Fat from a Recipe](#)[Cheat Sheet for Portion Sizes](#)[How to Take your Heart Rate or Pulse](#)[Keep it Safe Stretch those Muscles](#)[Keep Warm in the Cold](#)

#### Chat Session Excerpts:

[Apr 18 chat excerpts-Physical Activity](#)[Apr 20 chat excerpts-Exercise-Cindy](#)[March 30 Chat Excerpts](#)

#### Helpful websites:

[AHA Delicious Recipes](#)[Heart Healthy African American Dishes](#)[Heart Healthy Latino Dishes](#)[Heart Healthy Recipes](#)[Keystone Active Zone](#)[Local Farmers Markets](#)

#### Don't have MSN Messenger yet?

**Click here:** [Download MSN Messenger](#)

#### Don't have IE 6.0 yet?

**Click here:** [Download IE 6.0](#)

#### Don't have Adobe Reader yet?

**Click here:** [Download Adobe Reader](#)

*The "Resources" page includes (a) DPP handouts; (b) helpful Internet links; and (c) excerpts from chat sessions between lifestyle coaches & participants.*

## Virtual Lifestyle Management

[Home](#)[Lessons](#)[Workbook](#)[Keeping Track](#)[Resources](#)[Communicate](#)

### Communicate

[VLM Home](#) :: [Communicate](#)[System Support](#)

**Contact your Coaches:**  
[Secure Messaging](#)

**Chat with your peers:**  
[UPMC Patient Chat](#)

#### Announcements

##### Instructions for Joining a VLM Chat

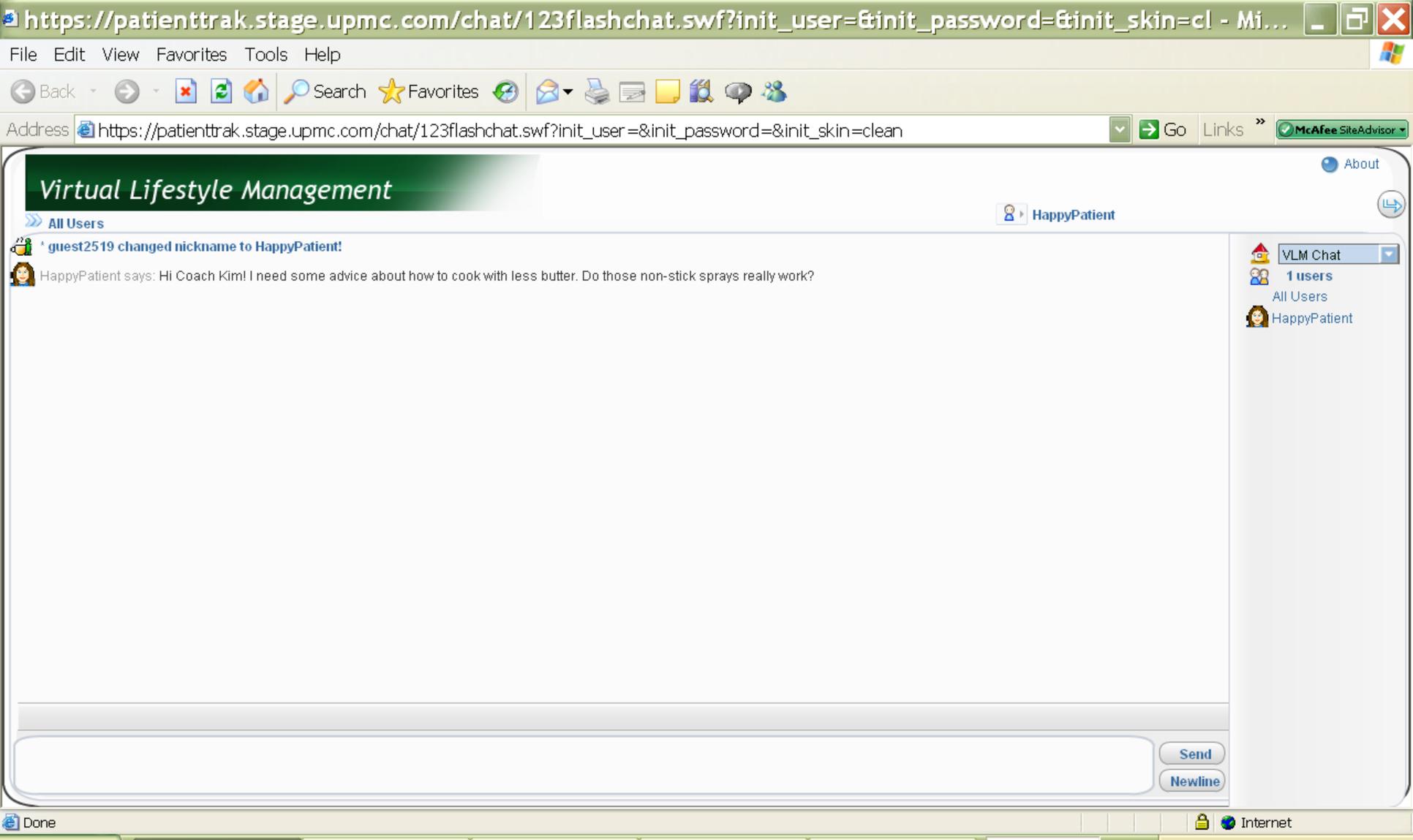
03/29/2007

- 1) Click on the UPMC Patient Chat link on the [Communicate](#) page; it will open the Chat Room Terms of Use.
- 2) Scroll down and click "Accept Terms" to enter the chat area.
- 3) Once in the VLM chat area, click on the appropriate room to enter (it will be named by the time and date of the chat)
- 4) You may choose to click on the Person symbol (Change display nickname) next to "guest#" to change your nickname. A window will open. Remove the Nickname "guest#" entry and type a nickname of your choice. This change will apply to the current session only.

#### Calendar of Events

May 2007						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	1	2	3 <a href="#">VLM Chat</a>	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

*From the "Communicate" page, participants can read announcements, view the calendar, join a chat, or send a secure message to their personal Health Coach.*



*In chat sessions, patients obtain real-time responses to their questions from a health coach. They can also gain social support from their peers.*

# Virtual Lifestyle Management

[Home](#) [Emails](#) [Reports](#)



[VLM Home](#) :: [Patient Information](#)

[?](#)  
[Help](#)  
[System](#)  
[Support](#)

## Information For Patient: Sally Test

Hierarchy : GIMO - General Internal Medicine at UPMC Montefiore  
Tuesday, February 06, 2007  
Last Logon: May 02, 2007

## Pending task

Description	DueDate
Journey Daily Tracking	March 26 2007
1	

## Weekly Email Text: [< Email History >](#) [Add Additional Email](#)

Mar 22 [< View draft text >](#) [< Mark as Sent >](#)  
Mar 22 Sent Mar 22, 2007  
Mar 15 Sent Apr 23, 2007  
Mar 08 Sent Feb 12, 2007  
Mar 01 Sent Feb 14, 2007  
Feb 22 Sent Feb 22, 2007  
Feb 22 Sent Feb 12, 2007  
Feb 15 Sent Feb 12, 2007  
Feb 08 Sent Feb 12, 2007  
Feb 01 Sent Feb 12, 2007

## Patient's Pending Lesson:

Patient has no pending lessons

## Patient's Completed Lessons

Lesson Name	Completion Date
Lesson 0: Orientation	January 26 2007

## View Patient's Workbook

View Action Plans:

Select workbook session:

Select workbook type:

[View](#)

## Patient's Keeping Track Status

Last Review Day: Mar 22, 2007

[View Week's Results](#)

## Current Week's Tracking

[Click to view weekly grid](#)

Tracking Date	Track Description
March 23 2007	Tracked Mar 24 2007
March 24 2007	Mark as not Tracked Mar 24 2007
March 25 2007	Tracked Mar 25 2007
March 26 2007	Not Tracked
1	

## Previous Week's History:

[< Mar 22, 2007 >](#)  
[< Mar 15, 2007 >](#)  
[< Mar 08, 2007 >](#)  
[< Mar 01, 2007 >](#)  
[< Feb 22, 2007 >](#)  
[< Feb 15, 2007 >](#)  
[< Feb 08, 2007 >](#)  
[< Feb 01, 2007 >](#)

*Health coaches review progress weekly for 16 weeks, then bi-weekly, and send brief encouragement & advice.*



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# Pilot Evaluation

**50 patients enrolled from 11/16/06 & 2/5/07**

Referred by Primary Care Providers

Overweight or obese with >1 weight-related CVRF

With or without diabetes



# Sample Description

*Mean (SD) or frequency (%)*

Age	51.94 (10.82)
Sex [n (%) female]	38 (76)
Race	
White	43 (86)
African American	4 ( 8)
Other	3 ( 6)
Baseline Weight	
Overweight	10 (20)
Obese Class I	13 (26)
Obese Class II	11 (22)
Obese Class III	16 (32)



Current Smoking	2 ( 4)
# of wt-related CVRF	1.74 (0.80)
Ability to pay for basics	
Not at all hard	35 (70)
Somewhat hard	13 (26)
Very hard	2 ( 4)
Education	
Some HS/GED	2 ( 4)
Some college	14 (28)
Completed college	9 (18)
Graduate degree	25 (50)

# Pilot analyses

Before-after evaluation: change in weight & blood pressure and 95% CI's among completers and using LOCF.

Structured interview with qualitative analysis

N= 35

2 coders (kappa = 0.987)

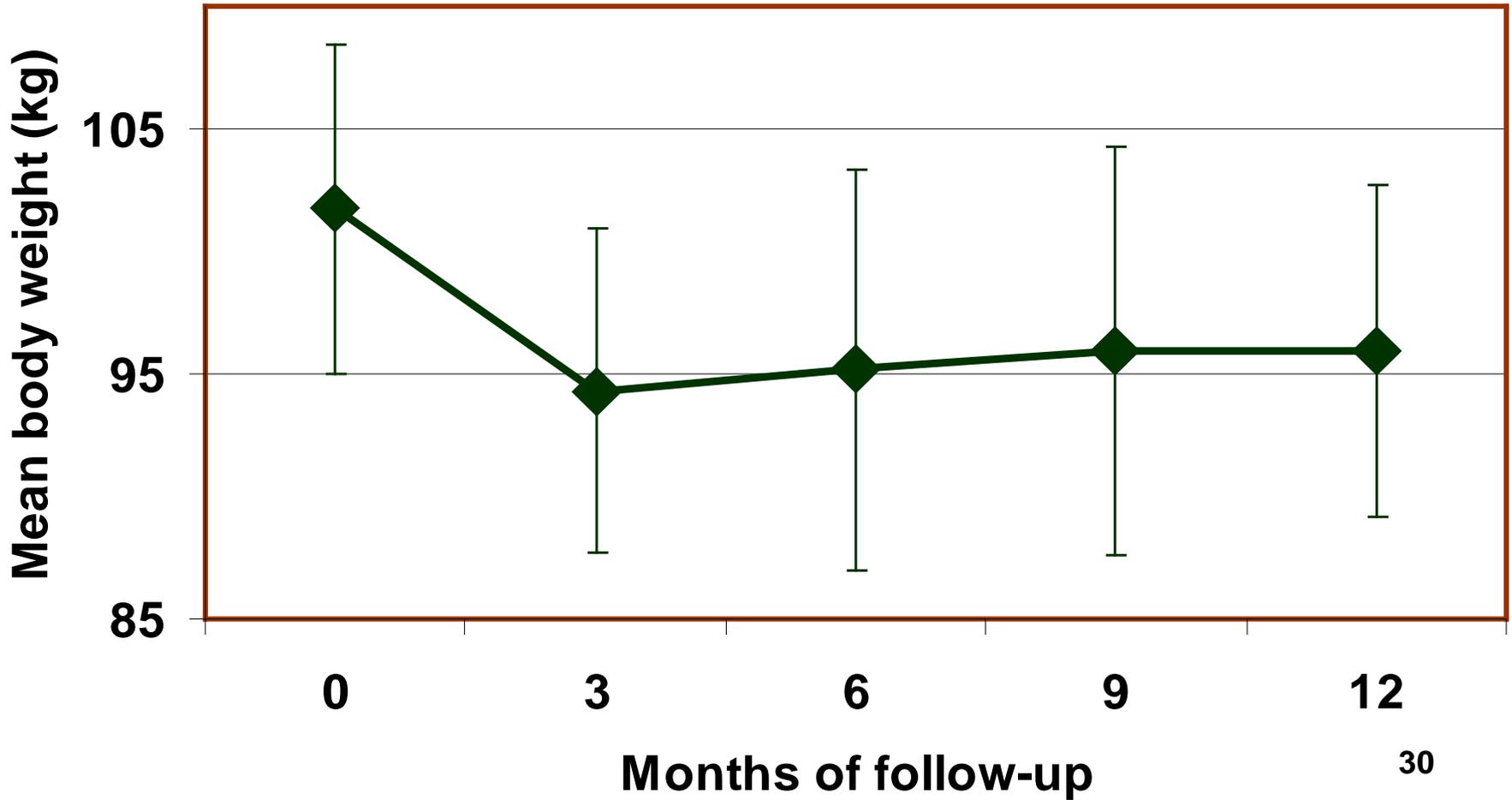
# 1-Year Program Use

Total # of logins	55.60 (50.34)
Login during last 30 days	50%
Entered $\geq 1$ follow-up wt	98%
Wt tracking in $\geq 40$ weeks	40%
Completed $> 16$ lessons	42%
Lesson during last 30 days	24%

# Change in Weight & Blood Pressure

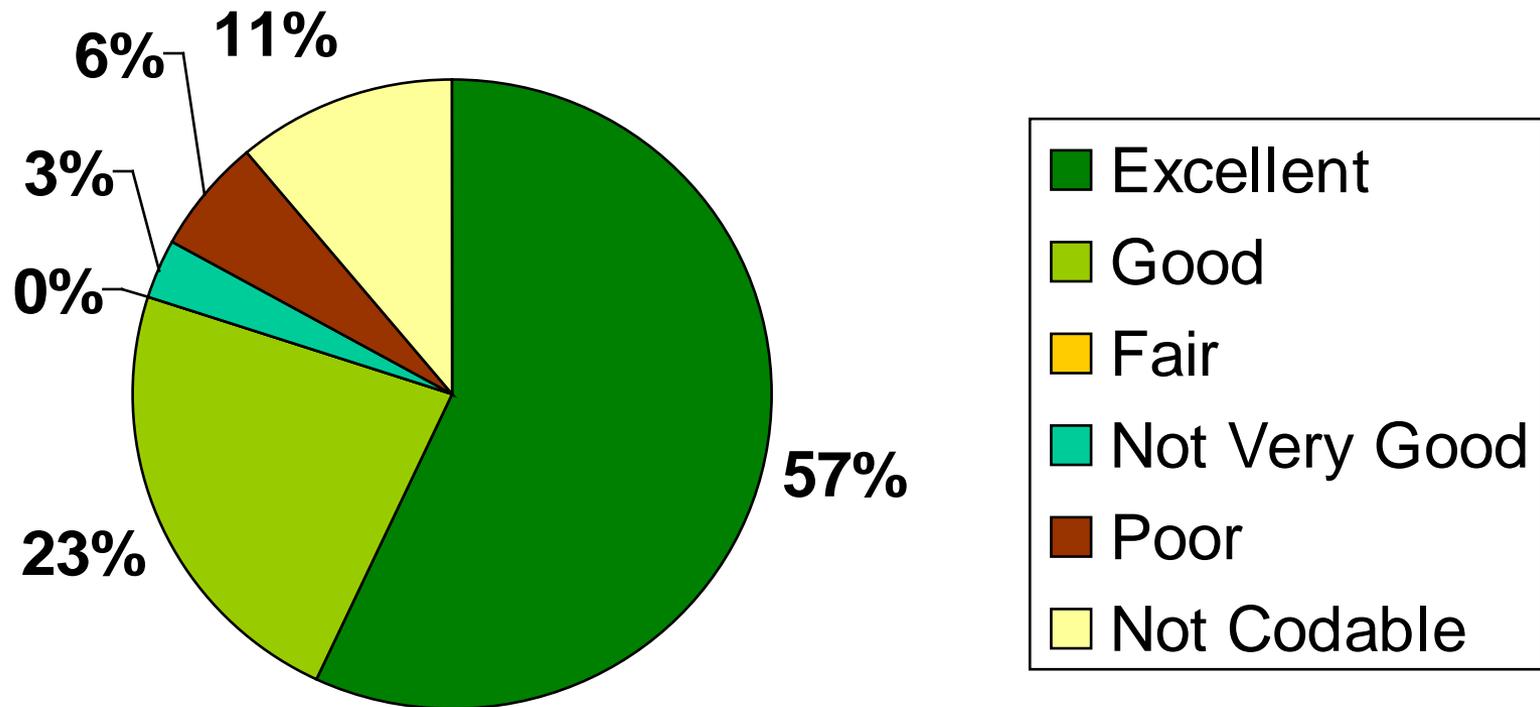
<b>Weight (kg)</b>	<b>mean (95% CI)</b>
• Completers (n=45)	-4.79 (-7.36, -2.22)
• LOCF (n=50)	-4.94 (-7.39, -2.48)
<b>SBP (mm Hg)</b>	
• Completers (n=45)	-7.33 (-10.75, -3.92)
• LOCF (n=50)	-6.56 ( -9.73, -3.39)
<b>DBP (mm Hg)</b>	
• Completers (n=45)	+0.44 (-2.74, +2.83)
• LOCF (n=50)	+0.28 (-2.25, +2.81)

# Average weight change



# Participant Satisfaction

Can you describe how helpful the program was in attaining your goals?





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# 4 Themes emerged regarding the most useful program aspects

Self-monitoring

Information

Discipline

Attentiveness



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# Limitations of the Pilot Evaluation

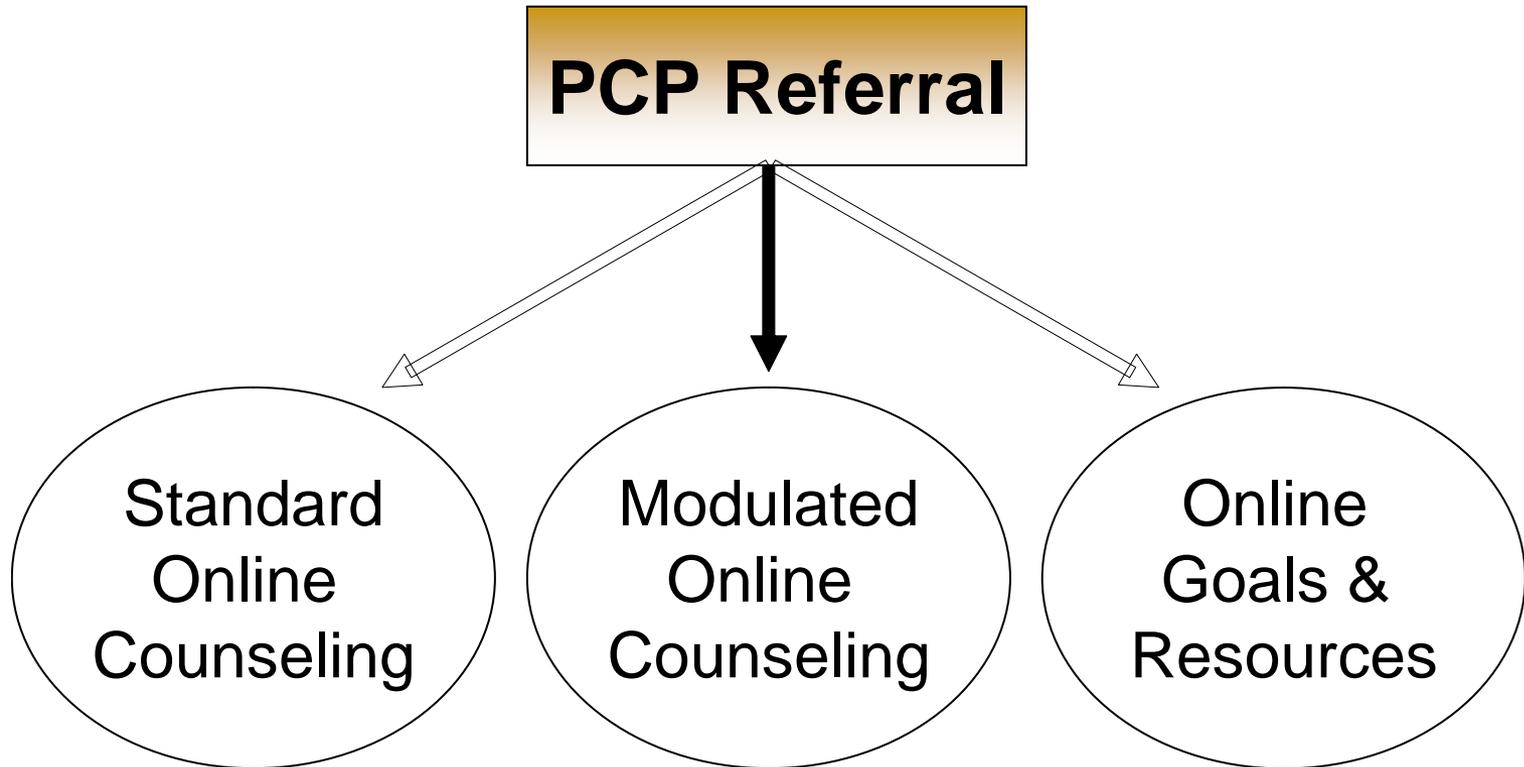
Uncontrolled data

Limited sample size

Technical impediments limited the program's intended support mechanisms

Current inability to accommodate patients with vision or hearing impairment, or those who are not English-speaking

## Next Step: Online Counseling to Enable Lifestyle-Focused Obesity Treatment in Primary Care (OCELOT-PC) Study



# Value

Internet-based intervention can promote clinically meaningful weight loss among individuals with high risk for weight-related health problems

The model of physician referral, coupled with an online intervention, provides a mechanism for overcoming barriers to high-quality clinical counseling

Lower staffing needs of an Internet-based approach may result in a more cost: effective intervention

Technologic advances may open diverse new options for improving preventive counseling in the clinical setting



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While the University of Pittsburgh has licensed the program contents, the authors have assigned the copyright to the University & receive no personal royalties from its commercial use



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1R18HS018155-01



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# Self-Monitoring

*“It was a wealth of functionality in being able to keep track of exercise and nutritional values of the foods that I was eating, not only on a day to day basis, but, in a historical perspective and looking back...it was also a good place to look back and see that I really had made progress when I thought that I hadn't necessarily made much progress.”*



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# Information

*“I think it was helpful to have someone to communicate with. When you had a question, you could fire off a question and get an answer back. Things like that... and certainly my coach was very helpful in advising me along the way whenever there were issues that I needed some help with.”*



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# Discipline

*“The success that I experienced for me that was the greatest was in the area of exercise, particularly in becoming more disciplined and regimented, as well as recording and making it more of a habit and kind of a labor of love instead of something that I was feeling kind of forced to do.”*



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# Attentiveness

*“...left to my own devices, if something doesn't come up in front of me everyday, then I will tend to forget about it... Out of sight, out of mind. So that contact from the coaches was a little reminder like, hey, you're part of this program and it's a choice that you made to be healthier and that kind of thing.”*