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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

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

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

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

Our Solution: Adapt the intervention for online delivery

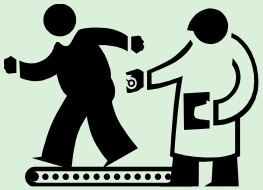
- Maintain full curriculum
- Capitalize on the authority of PCP advice and longevity of the 1º care relationship
- Expand health-care team to include a virtually-accessed lifestyle expert
- Focus the lifestyle coach's time on tailored advice & support
- Enable participation at the time & Internet location of choice
- Allows for technological innovations

Online counseling can be smoothly integrated with routine primary care

Clinical Process & Resources

Pt views waiting room posters

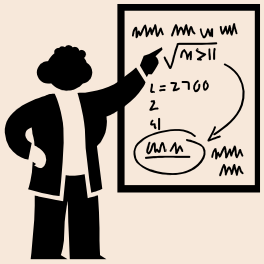
MD advises weight loss & makes referral



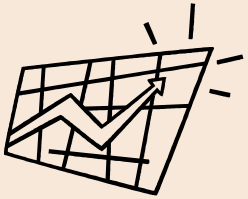
Routine referral processing

Online Counseling Resources

Automated online curriculum



Online lifestyle coach



Electronic self-monitoring tools

Links to community resources

Clinical Process & Resources

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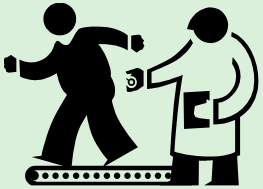

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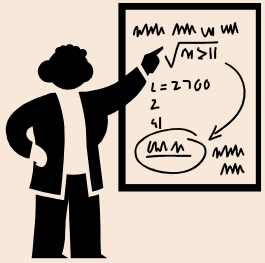
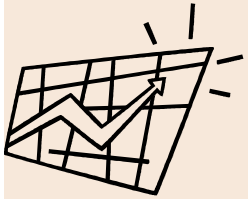
Online Counseling Resources

Automated online curriculum



Online lifestyle coach



Electronic self-monitoring tools

Links to community resources

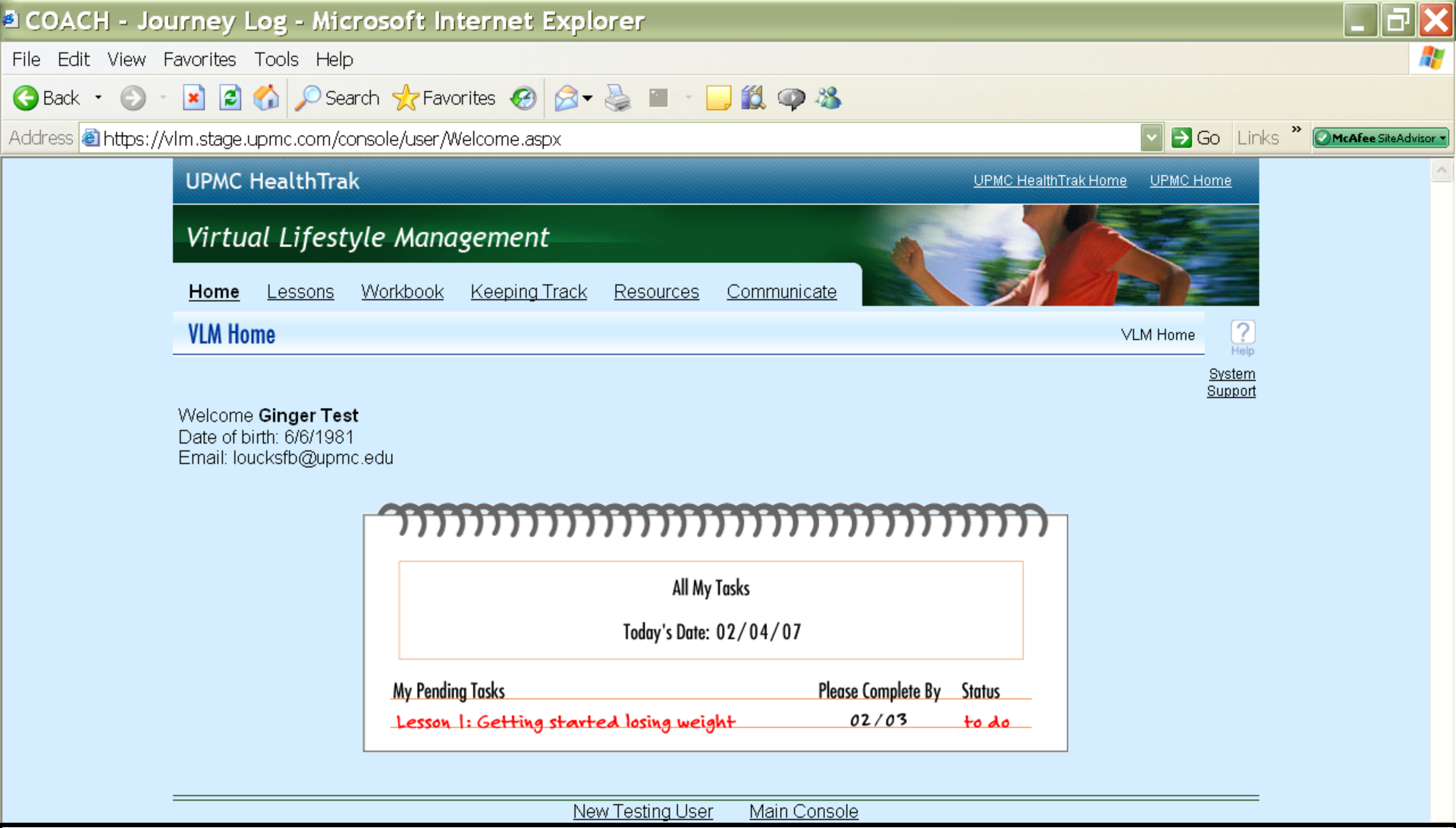
Clinical Process & Resources

Pt views waiting room posters

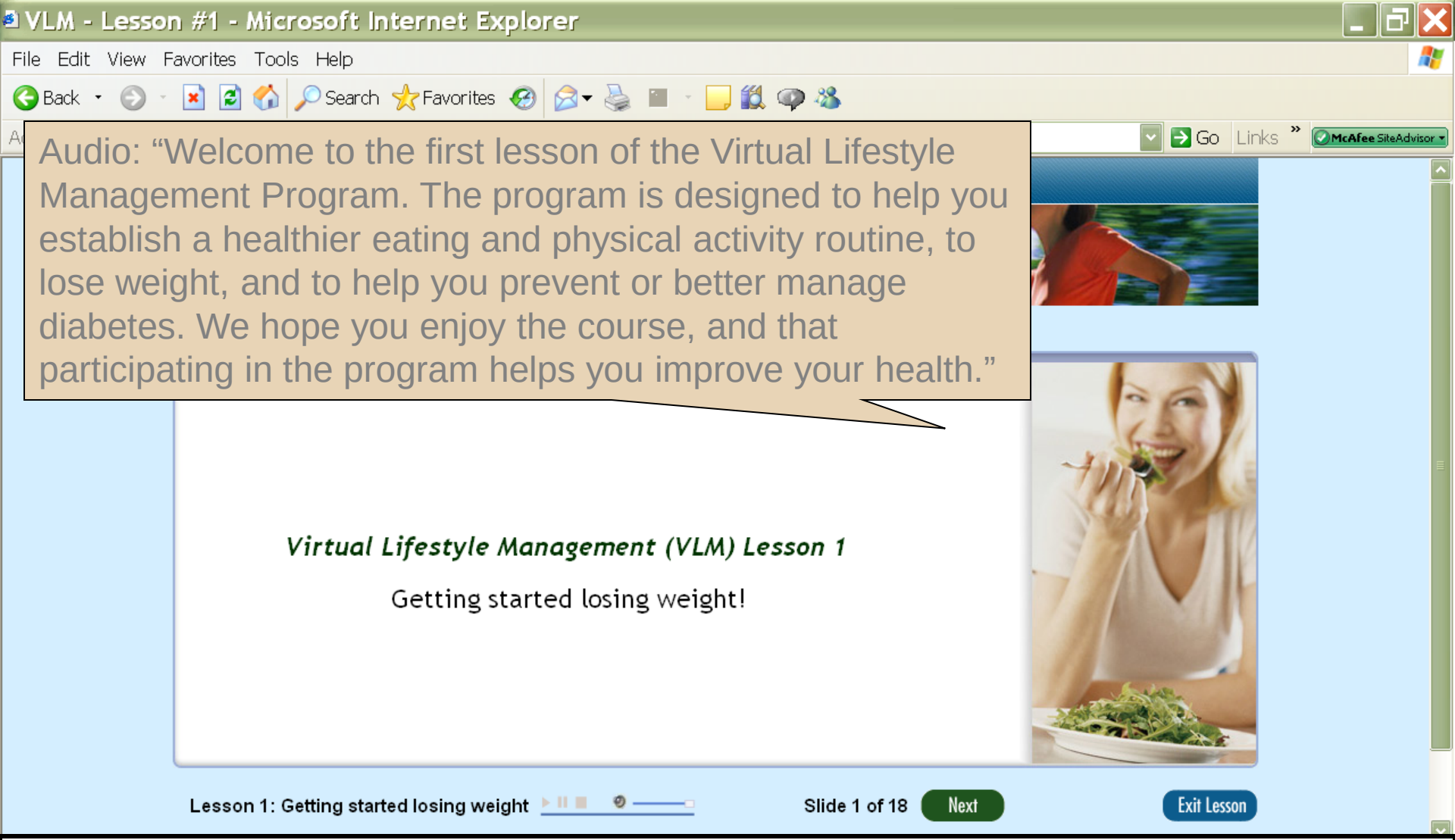
MD advises weight loss & makes referral

Routine referral processing

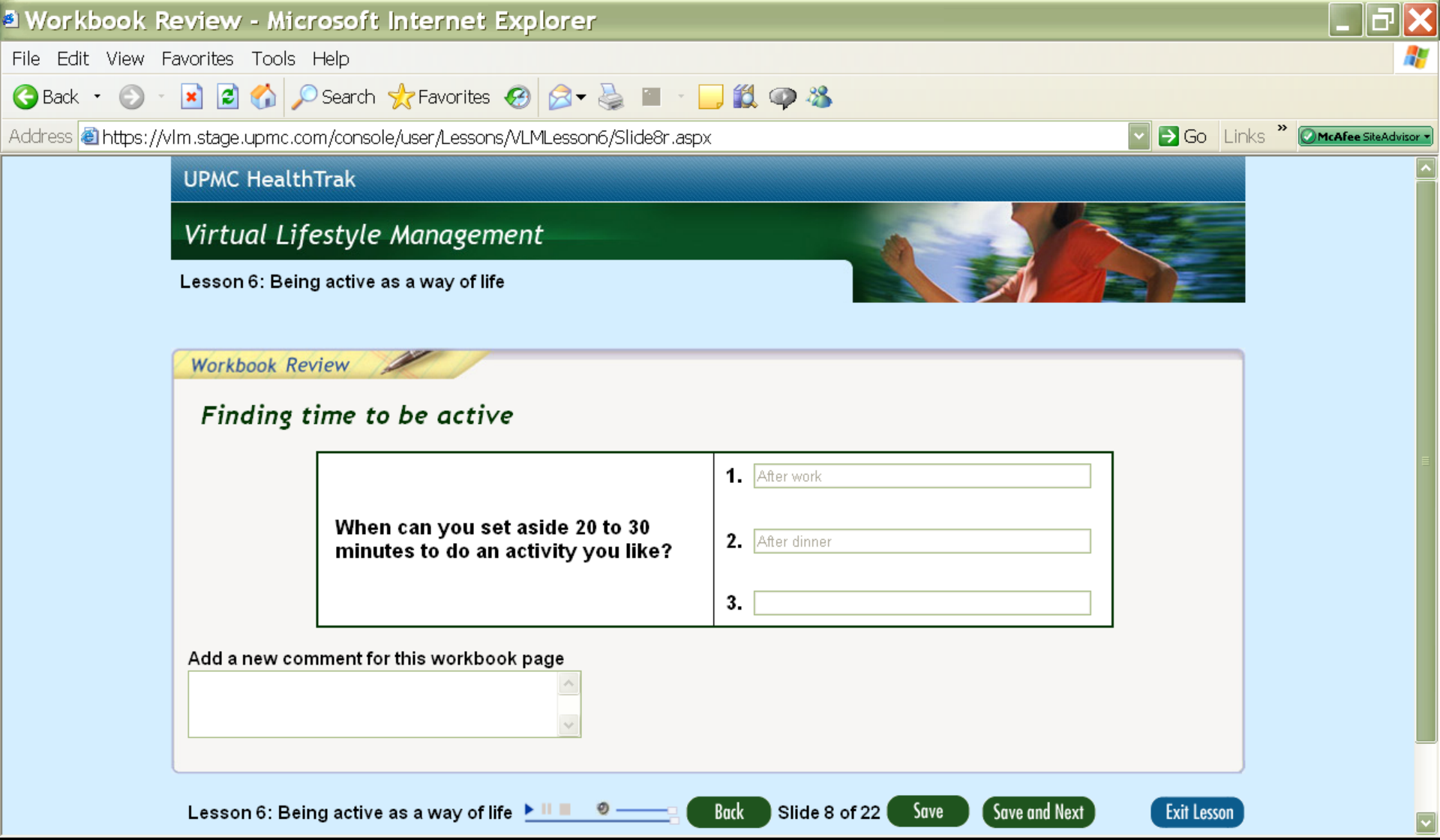
Feedback & support at F/U appointment



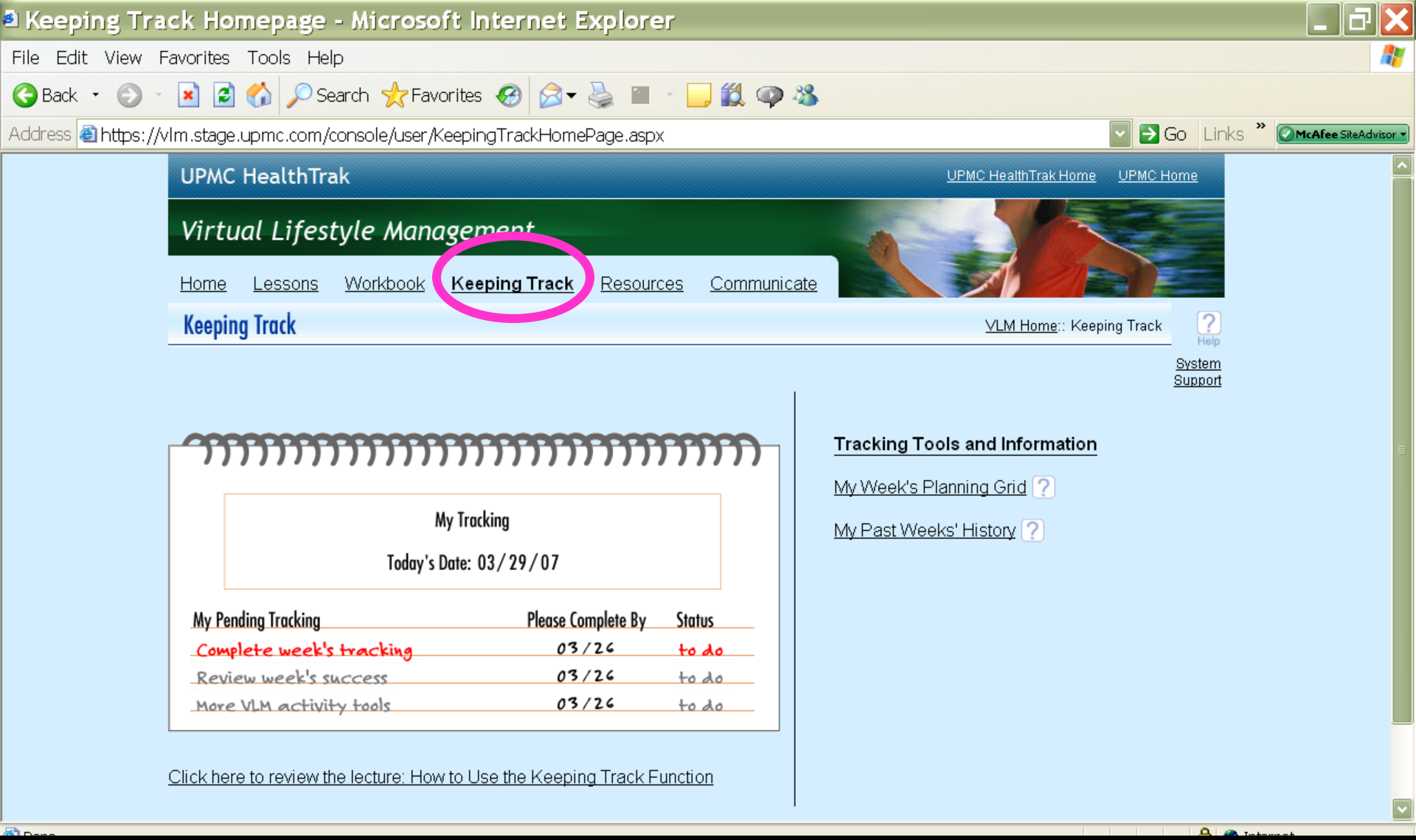
At the home page, a clipboard displays all pending tasks. Key program components are displayed across the top of the screen.



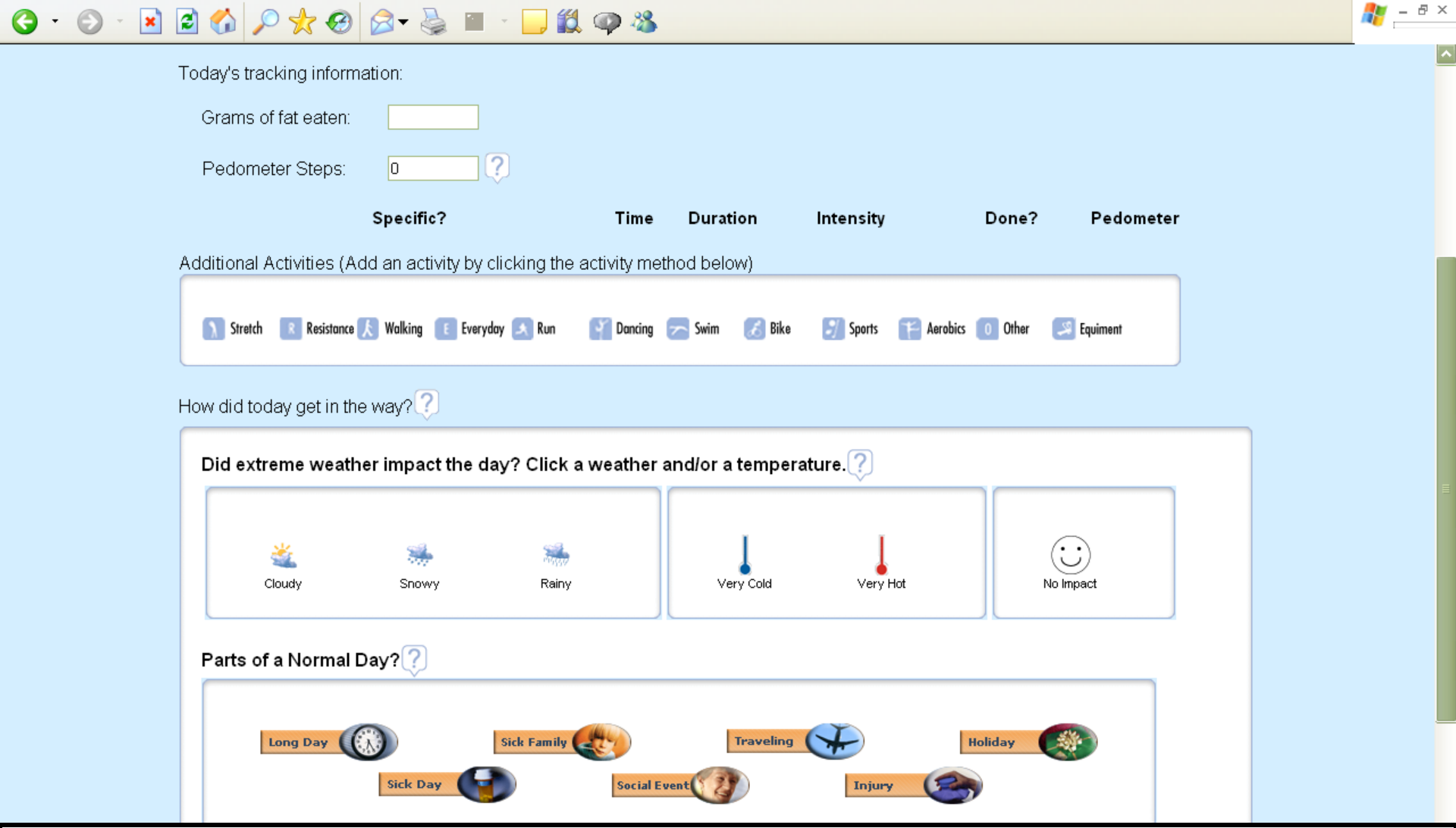
It includes 16 weekly, then 8 monthly lessons. Clicking on a pending lesson starts the audio lesson, accompanied by supporting images.



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.



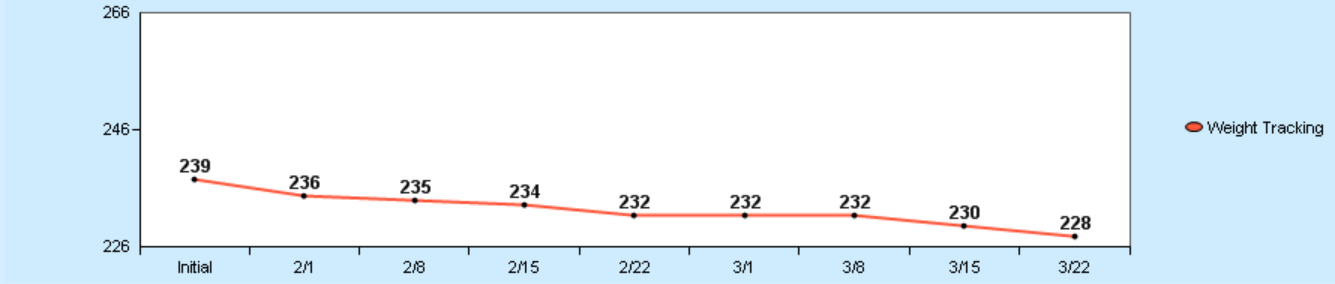
In the "Keeping Track" section, participants self-monitor weight, diet, and physical activity.



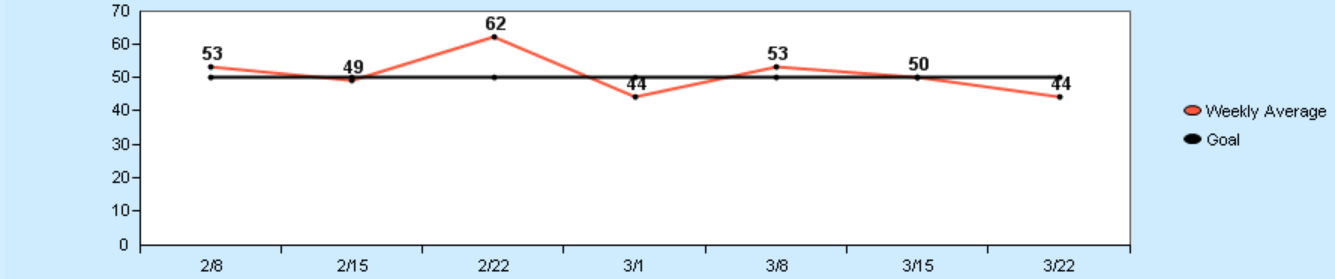
They enter daily fat & calorie intake, plus pedometer steps. They can also track a wide variety of physical activities, and personal barriers to healthy lifestyles.

Your Weekly Summary Graphs

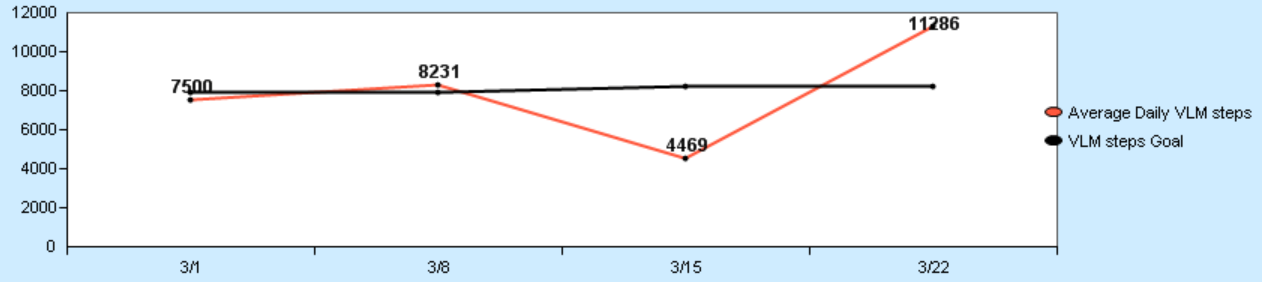
Weight Progress (lbs):



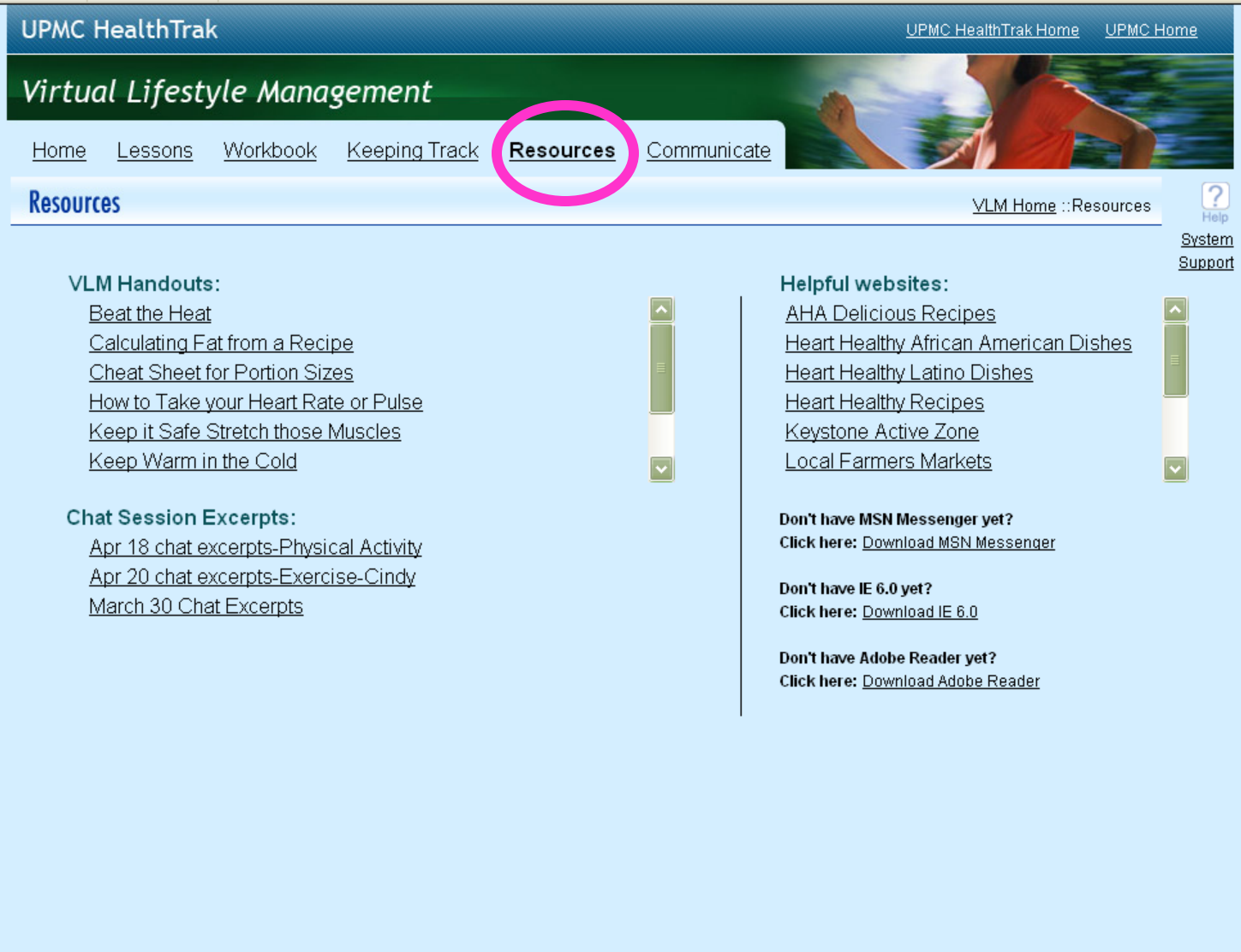
Fat Consumption Progress (grams):



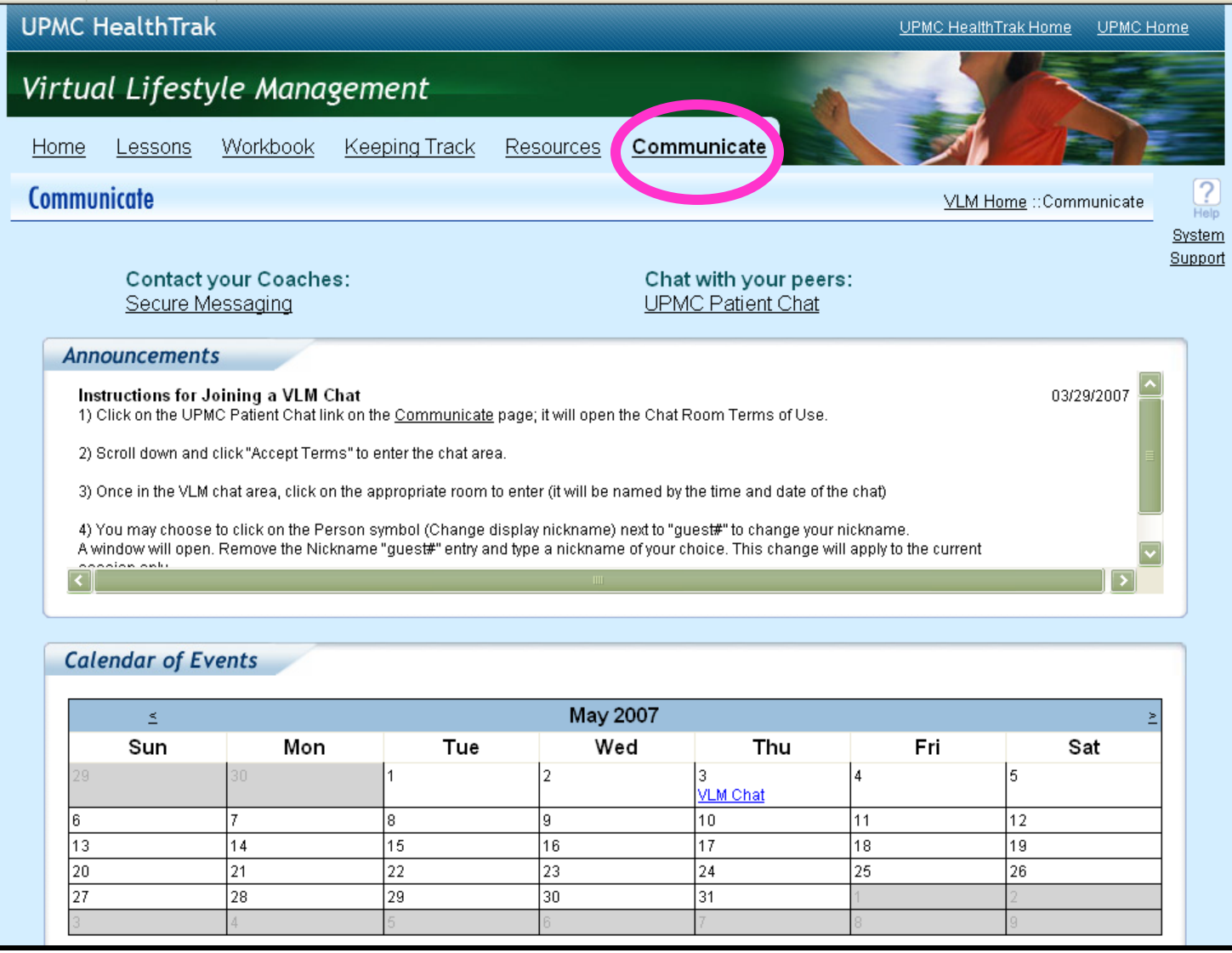
Physical Activity Progress (VLM steps):



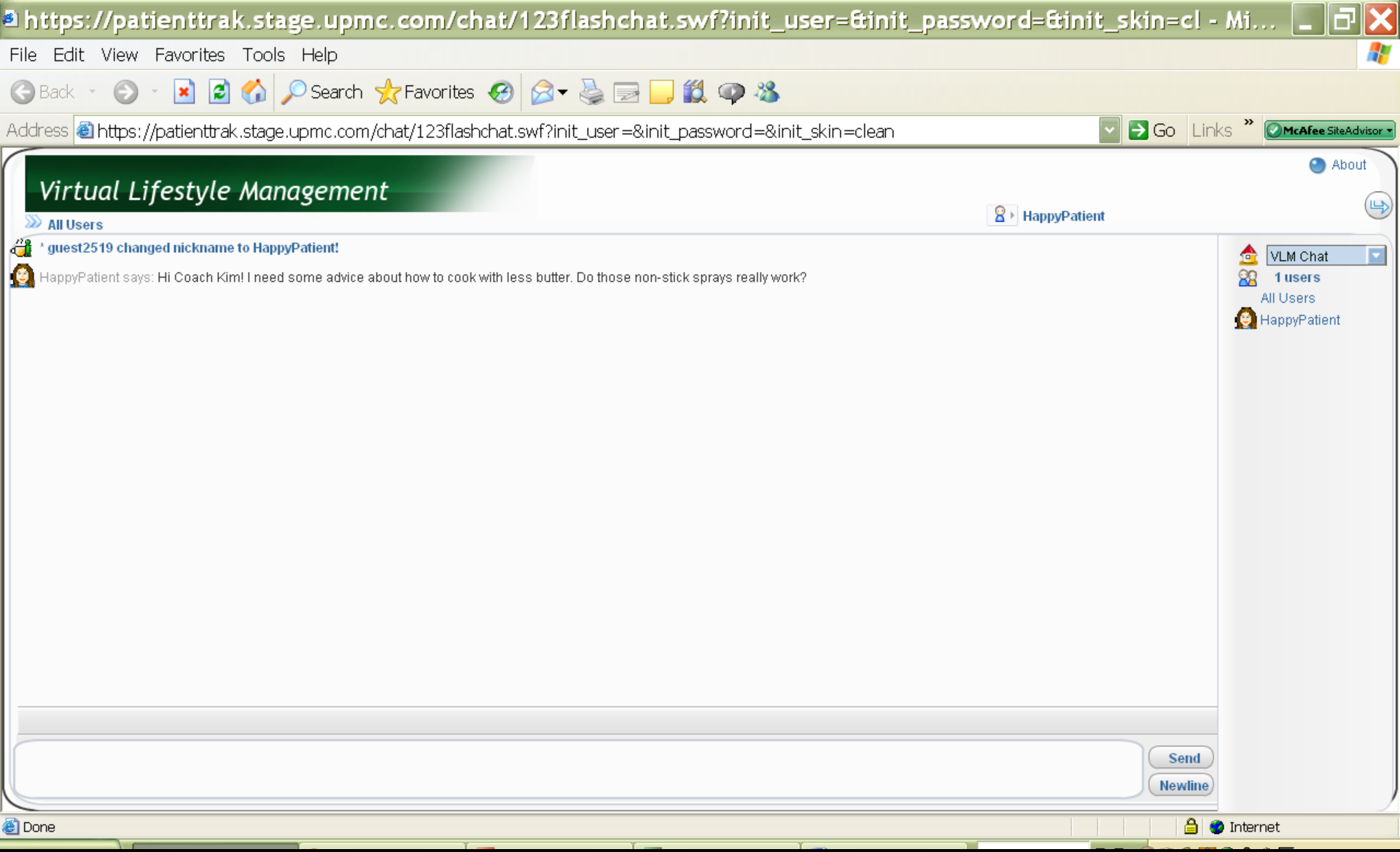
Once a week, participants receive automated emails detailing their progress since the start of the program (shown here), as well daily results from the last week.



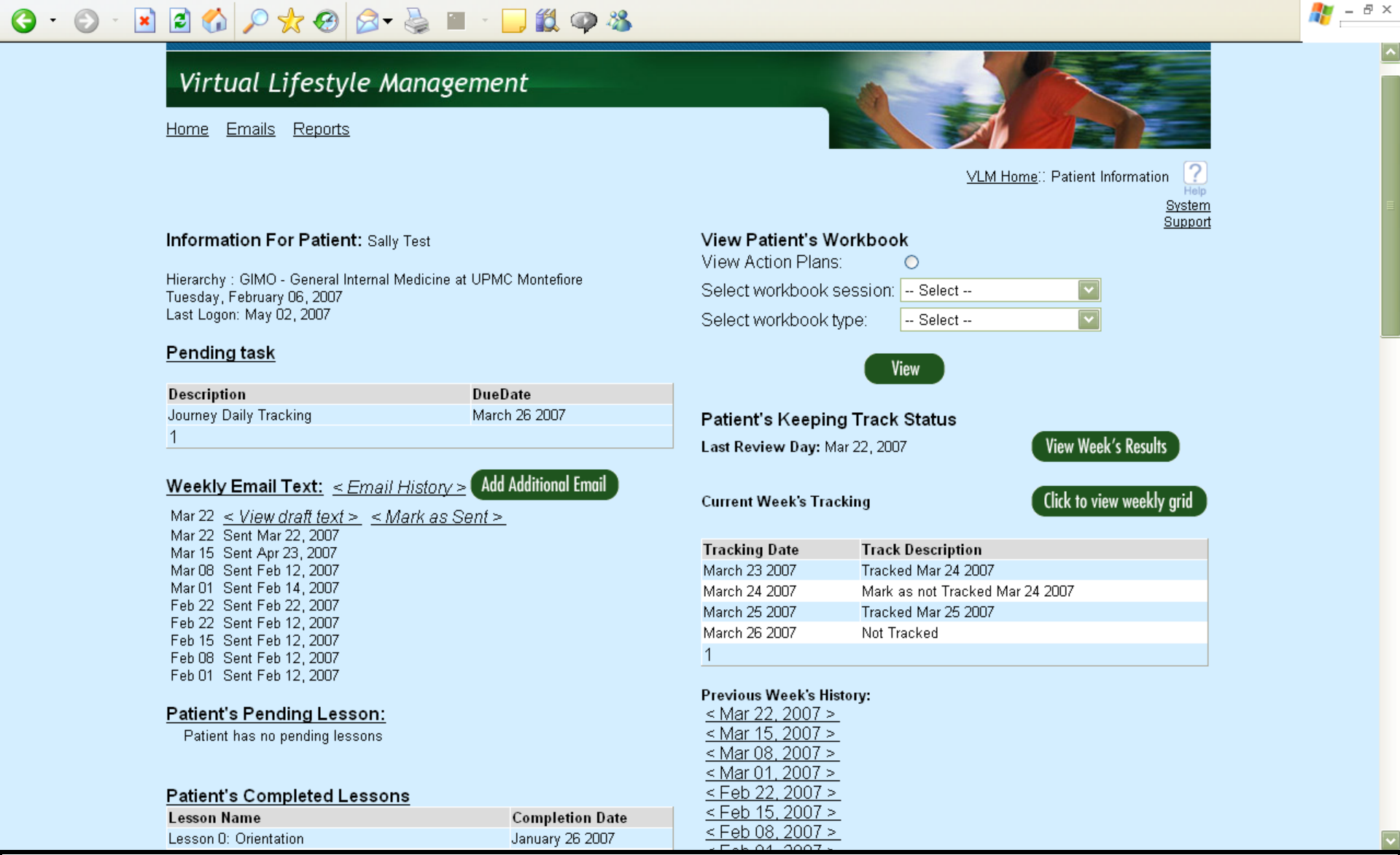
The "Resources" page includes (a) DPP handouts; (b) helpful Internet links; and (c) excerpts from chat sessions between lifestyle coaches & participants.



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.



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

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

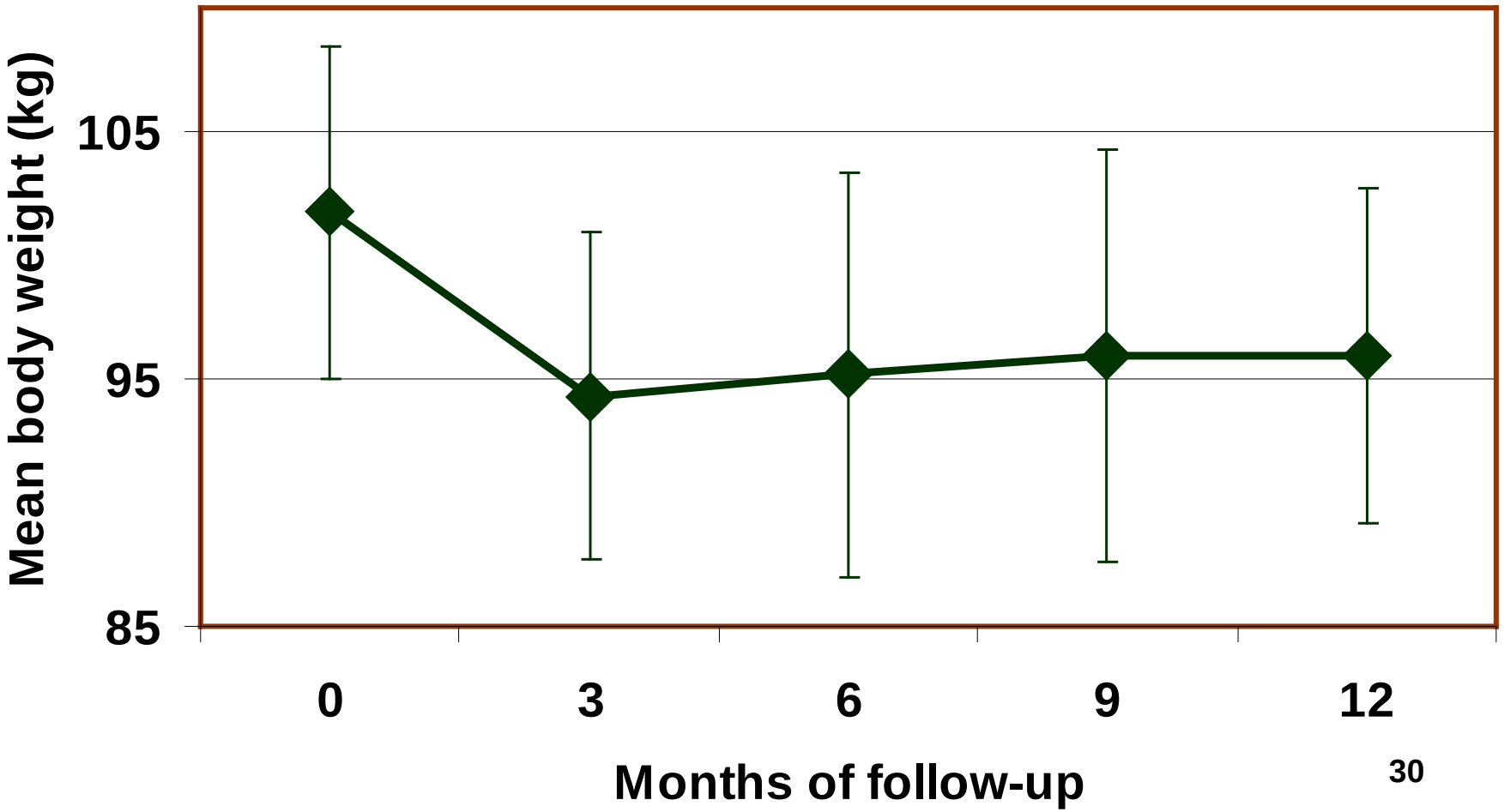
Total # of logins	55.60 (50.34)
Login during last 30 days	50%
Entered ≥1 follow-up wt	98%
Wt tracking in ≥40 weeks	40%
Completed >16 lessons	42%
Lesson during last 30 days	24%

(McTigue et al. Telemedicine & e-Health, Nov 2009)

Change in Weight & Blood Pressure

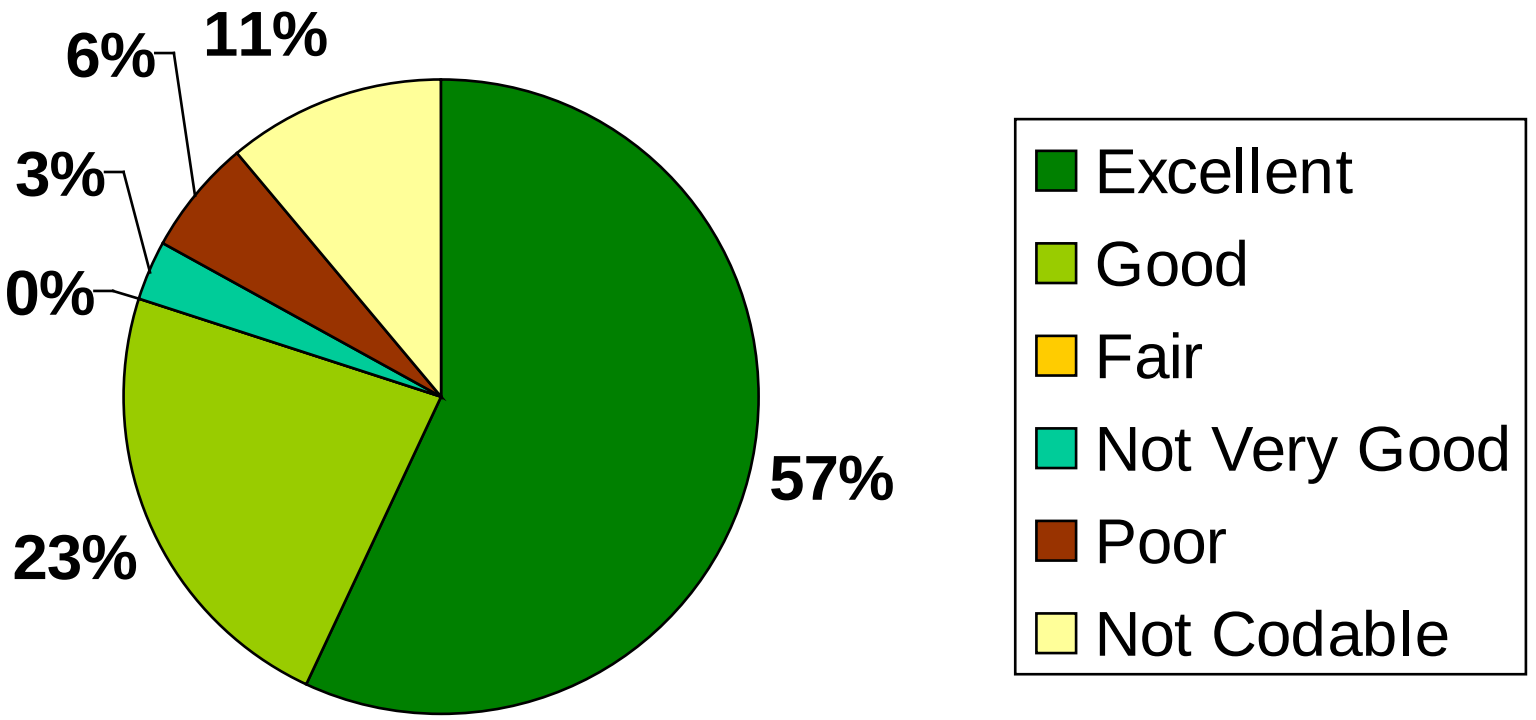
Weight (kg)	**mean (95% CI)**
• Completers (n=45)	-4.79 (-7.36, -2.22)
• LOCF (n=50)	-4.94 (-7.39, -2.48)
SBP (mm Hg)	
• Completers (n=45)	-7.33 (-10.75, -3.92)
• LOCF (n=50)	-6.56 (-9.73, -3.39)
DBP (mm Hg)	
• Completers (n=45)	+0.44 (-2.74, +2.83)
• LOCF (n=50)	+0.28 (-2.25, +2.81)

Average weight change



Participant Satisfaction

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



Bhargava et al. CDC Diabetes Translation Conference. 2009

4 Themes emerged regarding the most useful program aspects

Self-monitoring

Information

Discipline

Attentiveness

Limitations of the Pilot Evaluation

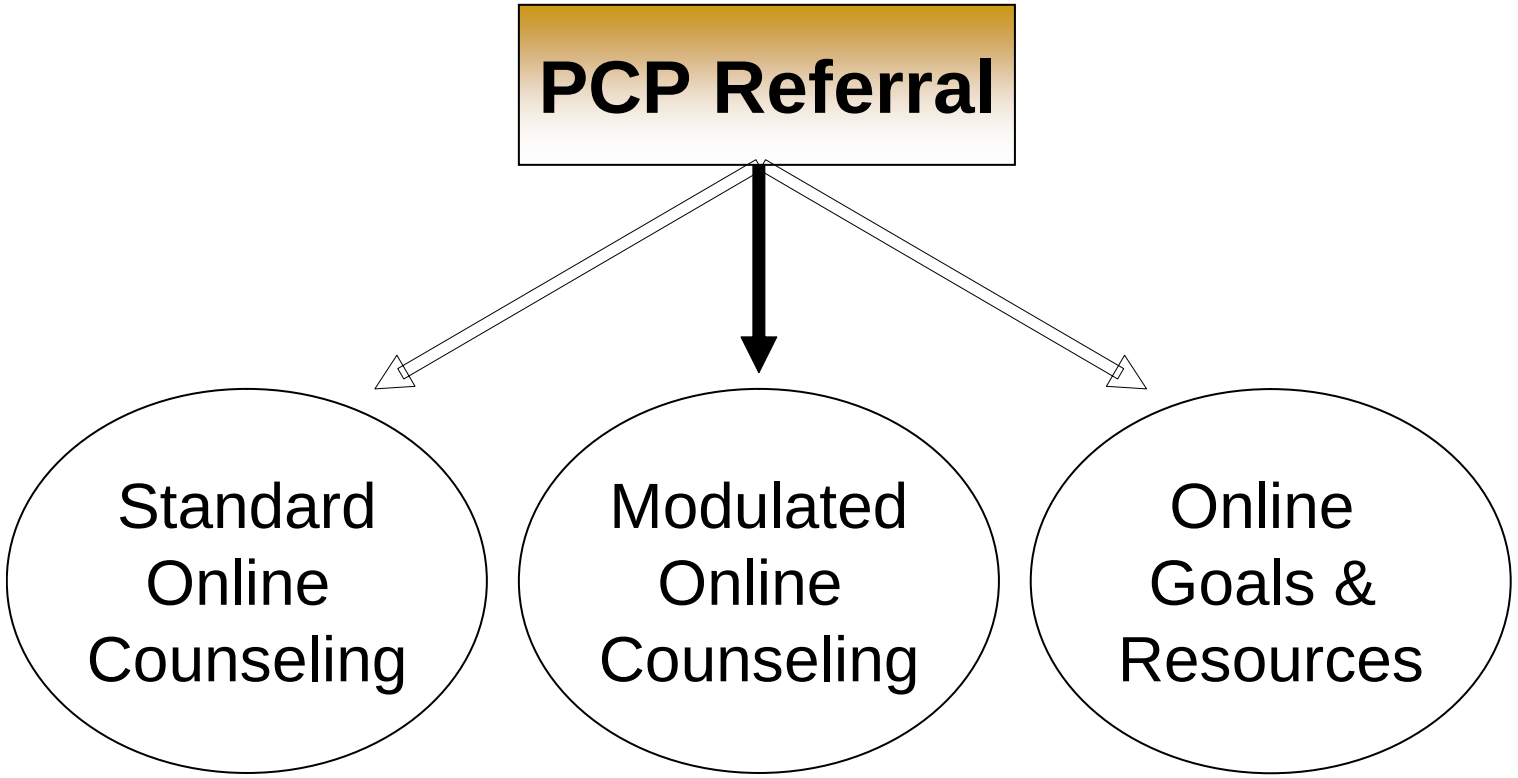
Uncontrolled data

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



Ocelot PC

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

Acknowledgements

Investigators: Molly Conroy, Laurey Simkin-Silverman, Cindy Bryce, Rachel Hess, Anthony Fiorillo, Gary Fisher, Susan Zickmund

The UPMC IT team provided consultation advice regarding the development of the online version of the DPP intervention. They subcontracted with DPS-Health to program the software & incorporate their pre-existing physical activity self-monitoring tool.

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

Acknowledgements

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The OCELOT-PC Study is funded by AHRQ: AHRQ 1R18HS018155-01

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."

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."

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."

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."