A VA-Based, Multidisciplinary Weight Management Program

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With overweight or obesity leading to the premature death of one in 10 people in the United States, the VA has initiated a national campaign against these conditions. These authors describe a resource-efficient mechanism for implementing the VA's initiative on a local level.

It has become abundantly clear in the last decade that the United States is facing a national health crisis in relation to overweight and obesity. Early reports resulting from epidemiologic realizations in the late 1990s showed that nearly two-thirds of all American adults had a weight problem.[1] A recent update showed that the prevalence of overweight and obesity continued to rise among American men, affecting nearly 71%.[2]

This so-called epidemic of excess weight carries with it staggering implications for the future health of U.S. adults and children. Obesity is now recognized as an independent predictor of mortality,[3,4] as well as a risk factor for countless other medical conditions, including congestive heart failure, cancer, osteoarthritis, obstructive sleep apnea, the metabolic syndrome, and diabetes.[1,5,6] Estimates show that overweight and obesity accounted for approximately 200,000 deaths in 2005, second only to tobacco use as a preventable form of death.[7]

The epidemiologic data and medical burden of excess weight is no less significant among U.S. veterans. In a study published in 2005, Das and colleagues reported that 73% of the more than 1.7 million male veterans who received health care from the VA in 2000 were overweight and 33% were obese.[8] Rates of overweight and obesity in the more than 90,000 female veterans receiving VHA care in that same year also were high, with 68.5% overweight and 37% obese. Given these staggering percentages, the projected prevalence of obesity-related illnesses and their resulting costs could be predicted to be among the highest concerns for the VHA in the coming decades.

Despite a near constant barrage of reports regarding obesity in the popular press, the response from the medical and public health communities has been mixed. The National Institutes of Health (NIH) published guidelines for the recognition and treatment of obesity nearly seven years ago, yet studies continue to show that obesity is underrecognized and undertreated.[1,9,10] The Congressional response to the epidemic among veterans has been more direct. In 2004, a panel of experts was convened to outline a program of nationally directed, locally implemented weight management interventions. This program has become known as Managing Obesity/Overweight among Veterans Everywhere (*MOVE!*). *MOVE!* is now considered the national weight management and physical activity initiative from the VA National Center for Health Promotion and Disease Prevention (NCP).[11,12]

MOVE! involves a series of levels. Levels I and II outline tailored self-help and on-site support groups or individual contact at local facilities. Levels III, IV, and V describe the addition of pharmacotherapy; medically intensive interventions that may include residential treatment, low calorie diets, or day-treatment programs; and consideration of bariatric surgery, respectively. While the general goals of each level are well outlined, local VA medical centers have the

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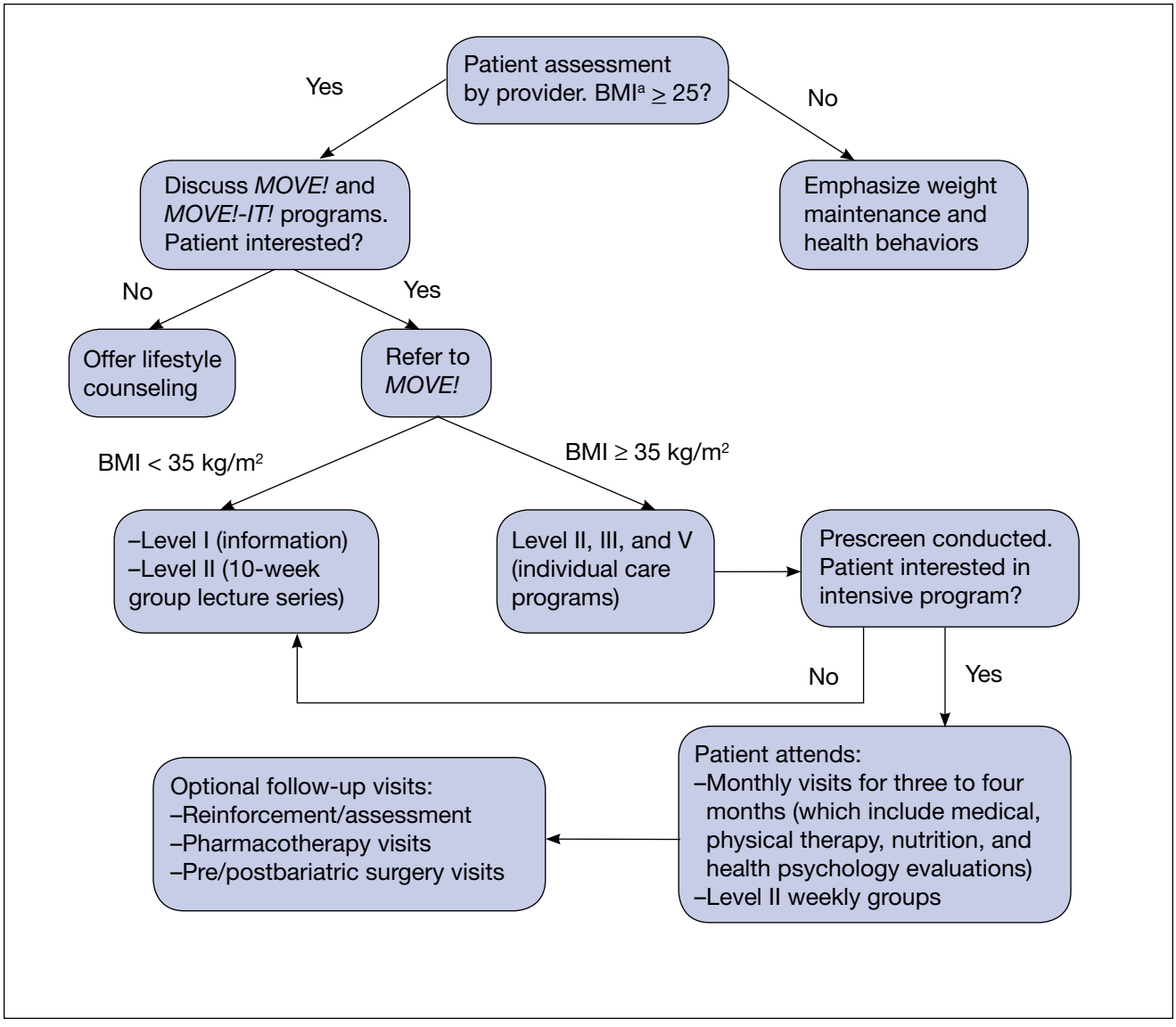

Figure. The VA Connecticut Healthcare System's Managing Overweight/Obesity among Veterans Everywhere! (*MOVE!*) and *MOVE-Intensive Therapy!* (*MOVE-IT!*) programs. [a]BMI = body mass index.

autonomy to develop their own specific programs to achieve those goals, taking into consideration local needs and resources and the broad policy requirements of *MOVE!*. Thus, the specifics of implementation across VA centers have been variable.

In order to disseminate the details of a practical version of a multidisciplinary weight management program, here we describe the currently functioning program of the VA Connecticut Healthcare System (VACHS). Our program is roughly based on the NCP's proposed *MOVE!* guidelines.

MOVE! AT VACHS

VACHS serves nearly 44,000 veterans. It is comprised of two main campuses, one in West Haven and one in Newington, as well as six community-based outpatient clinics. The West Haven campus, specifically, is akin to an academic, tertiary care facility, with an 84-bed inpatient unit, a large primary care section, and multiple subspecialty clinics. Planning for a multidisciplinary weight management program in this facility began the year before *MOVE!* was implemented by

the VA at a national level and was facilitated by the presence of the following academic departments: nutrition, health psychology, physical therapy, and primary care. In its current form, VACHS's program offers all levels of the *MOVE!* initiative outlined by the NCP, with the exception of Level IV (inpatient weight management). The group care offered in Levels I and II is simply referred to as the *MOVE!* program (Figure). Intensive, multidisciplinary individual care (which can be provided for in Level II and always is provided for in Levels III and V) is referred to as *MOVE-Intensive Therapy!* (*MOVE-IT!*). VACHS offers *MOVE-IT!* through a multidisciplinary clinic.

LEVELS I AND II (GROUP CARE)

Visits to our *MOVE!* program do not require an appointment, and their educational content closely follows that outlined by the *MOVE! Quick Start Manual*.[13] The one-hour group sessions take place weekly, are lecture-based, and topically are divided among three disciplines and taught by three different providers, each with a specialty in health psychology, nutrition, or physical therapy (20 minutes per topic). The group sessions continue over 10 weeks and then cycle back to the beginning. Veterans are able to join this program at any point during the cycle and are encouraged to remain in the program for as many sessions as they choose to attend. Patients' weight is monitored by the staff, with weigh-ins recorded at each group session.

LEVELS II (INDIVIDUAL), III, AND V

Our *MOVE-IT!* clinic offers individualized care for stage II obesity (defined as a body mass index [BMI] of 35 kg/m^2 or greater). Referral through the VA's computerized patient record system is required and typically is generated by patients' primary care or specialty care providers or by *MOVE!* staff.

Our model for *MOVE-IT!* incorporates most of the minimal core elements that are outlined in VHA Handbook 1101.1.[12] Specifically, the program (1) is administered at our facility by a Program Coordinator (PC) and a Weight Management Physician Champion (WMPC), both of whom are designated by the VACHS director; (2) employs a multidisciplinary team approach, including the core disciplines of medicine, nutrition, health psychology, and physical therapy; (3) uses a multifactorial patient assessment; and (4) offers several intensities of patient-centered treatment. The specific structure of the clinic—including when it meets, for how long, how many patients are seen, and the content of the instruction—is unique to the VACHS.

Patients who participate in *MOVE-IT!* are required to attend at least seven of the 10 weekly group lectures in Levels I and II (Group Care), as well as three to four individualized-therapy clinic appointments. The two-hour individual clinic visits are made up of four 30-minute mini appointments with a physician, a nutritionist, a health psychologist, and a physical therapist. Four patients rotate through each of these slots in the weekly clinic. Occasionally, additional 15-minute follow-up visits are scheduled to allow for monitoring of pharmacotherapy or follow-up as deemed necessary by a specific discipline. For example, a nutrition follow-up may be scheduled for a patient requiring additional support for significant dietary changes or a health psychology follow-up may be scheduled for a patient requiring additional support while making behavioral lifestyle changes that promote healthy eating and physical activity. Following the individual visits, all of the members of the multidisciplinary team meet for *MOVE-IT!* rounds to discuss the patients and their plan of care.

After patients have completed three to four monthly visits, they may be asked to return to the multidisciplinary clinic to be considered for pharmacologic or surgical management of their obesity. This is accomplished through individualized visits with the physician, during which management options are recommended according to the guidelines outlined by the NIH.[1] Specifically, patients with a BMI of 30 kg/m^2 or greater and those with a BMI of 27 kg/m^2 or greater and two or more obesity-related comorbities may be offered pharmacotherapy as an adjunct to lifestyle modification. Patients with a BMI of 40 kg/m^2 or greater and those with a BMI of 35 kg/m^2 or greater and two or more obesity-related comorbities may be considered for surgical referral.

Administration

Clinic administration is managed primarily by the local PC; in our clinic, this is a registered nurse. Referrals are received and reviewed by the PC, who conducts an initial phone screening with patients and briefly explains the *MOVE-IT!* program. Interested patients are asked to attend a one-hour prescreening appointment. During this appointment, the WMPC outlines the specific goals of the program and participant requirements. Patients who want to participate in the program are given an informational packet and time to complete the *MOVE23!* Patient Questionnaire.[14] This prescreen appointment has been essential in reducing the ultimate no-show rate for clinic visits, which is an important concern, given the resource intensiveness of the program.

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The PC schedules patients' first official *MOVE-IT!* clinic visit following the prescreen appointment. Patients are reminded of this and all appointments through computer-generated reminder letters and through direct phone contact by the PC.

On the day of the *MOVE-IT!* clinic visit, the PC supervises the patient check-in process by recording patients' vital signs and measuring their weight, height, and waist circumference. The PC also monitors patient flow from the time of the prescreen appointment through the various individual mini appointments. The PC participates in *MOVE-IT!* rounds, schedules recommended follow-up appointments, and maintains statistical data for enrolled patients.

Medical management

The medical management of obesity, including pharmacologic use and surgical referral, has been previously well outlined,[1] and various algorithms have been published giving broad strategies for identification and treatment of obesity as a chronic disease.[15] In *MOVE-IT!*, the physician serves a key oversight role in the initial assessment of patients and subsequent follow-up interventions.

In terms of initial assessment, a routine medical history, a weight-based history, and physical are performed. The medical history is taken in an effort to identify key obesity-related comorbidities (Table), conditions that might contribute to weight gain (such as comorbid psychiatric illness), and conditions that might interfere with exercise recommendations (including active cardiovascular disease or severe osteoarthritis).

The "weight-targeted" history includes determination of the patient's lowest and highest adult weights; goal for weight loss; and prior weight loss attempts, with the efficacy of these prior attempts noted; and family history of overweight. A "social history" is completed to identify lifestyle factors that might be contributing to excess weight. Patients are questioned regarding alcohol intake; tobacco use; and dietary patterns, including a specific assessment of snacking, eating out, and non-nutritive food intake. Their current employment status and living situation are identified. Household barriers to weight loss are noted (such as if a spouse or loved one is responsible for cooking).

Table. Obesity-related comorbidities

- Diabetes
- Obstructive sleep apnea
- Hypertension
- Osteoarthritis
- Cancer
- Depression
- Hypertriglyceridemia
- Cardiovascular disease

The first physician visit also includes a thorough review of the patient's current medication profile, with the goal of specifically identifying medications that might contribute to weight gain or loss. Additionally, laboratory data is reviewed at the initial visit (as well as at subsequent visits), focusing on the results of thyroid testing, fasting serum blood glucose levels, glycosylated hemoglobin values, and serum lipids levels.

At every physician visit, patients' weight, height, blood pressure, pulse rate, and waist circumference measurements are reviewed. In addition to a basic physical examination, the physician looks for any obvious clues to a secondary cause of obesity, as well as for signs of conditions-related obesity, such as the presence of a high risk waist circumference and its attendant metabolic risks.

After the physician's initial assessment, general recommendations are made regarding diet, exercise, and behavior modification. Subsequent visits are focused on the specific recommendations made by the multidisciplinary team, whereby the physician serves a paramount role in assessing and encouraging patient adherence. Medical history is also reviewed at all visits to determine if any significant changes have occurred that affect medications. For example, weight loss can lead to a need for a dose reduction in oral hypoglycemic medications.

Dietary change

Excess caloric intake on a daily basis is one of the central pathophysiologic components of excess weight. Hence, our program focuses heavily on dietary change. The goal of nutritional therapy is to promote gradual changes toward healthy eating. Short- and long-term goals are individualized, patient-centered, specific, and realistic.[16]

The components of nutritional therapy used in *MOVE-IT!* focus on promoting successful weight loss. First, a patient's anthropometrics and weight history are assessed. Variations in weight, environmental triggers to weight gain, and eating disorders are evaluated.[17] Second, a patient's dieting patterns are assessed, which includes an analysis of nutrient density and calorie intake. This is accomplished by using 24-hour food recall, food frequency ratings, and three-day food diaries. Third, environmental factors are assessed. These include ethnic background, which can affect the types of foods eaten; location of meals (eating in front of the television versus at the dinner table); time restraints, which can result in eating out or fast

food, skipping meals, and snacking as a meal; and financial restraints.

Following this assessment, nutritional goals for the patient are developed. Dietary recommendations emphasize a diet that is low in saturated fat, cholesterol (amounting to 30% or less in a patient's total daily fat intake), sugar, and sodium. The importance of choosing low fat dairy products; lean meats; and a diet that is rich in fruits, vegetables, and whole grains is reviewed. "My Pyramid," the most recent food guide pyramid developed by the U.S. Department of Agriculture,[18] is used to help outline different food groups and portion sizes. Food models are used to help educate patients about proper serving sizes. We strive for a daily reduction of 500 to 1,000 calories when developing meal plans, in order to help facilitate a weight loss of 1 to 2 lb per week.[1] Overall, a healthy diet that includes a variety of foods, which can help promote sustainable dietary change, is the key to success for patients in our *MOVE-IT!* clinic.

Behavioral health

Health psychologists serve a central role in any weight management program. Simply educating patients about the overall changes that need to be made with regard to their eating habits does not equate to providing them with the tools they need to make those changes. In our *MOVE-IT!* program, health psychologists divide their efforts into two main components—assessment and intervention.

The assessment process begins with the patient's first visit to the clinic, and it continues for the duration of treatment. This process seeks to identify psychosocial factors that contribute significantly to the unhealthy behaviors that lead to overweight and obesity. The factors routinely considered include history of mental health disorders or disordered eating patterns, previous weight loss attempts; current mood, level of physical activity, and level of motivation and self-confidence for adopting healthy lifestyle behaviors; perceptions of barriers to weight loss; current stage of change, or readiness to begin implementing lifestyle changes; and overall *MOVE-IT!* weight loss goal.[19–22]

The intervention phase of the health psychology protocol is rooted in the development of the patient's motivation for adopting healthy self-management skills. Motivational interviewing serves as the foundation upon which these interventions are based.[21] Within this approach, patients are guided through self-identification of the personal benefits of weight loss, as well as the downside to making lifestyle changes. Patient resistance to treatment adherence typically is seen in the early stages of weight loss. This is handled not by challenging the patient but by guiding him or her through the identification of the positive and negative aspects of making healthier lifestyle choices (that is, by rolling with the resistance). Models of this application of motivational interviewing within the context of weight management have been delineated in the medical literature.[20]

Throughout treatment in the *MOVE-IT!* clinic, the health psychologist assists patients in developing "SMART" (specific, measurable, action-oriented, reasonable, and timely) goals. For example, a goal of wanting to start exercising would be shaped into a more specific task that has measurable components, such as "begin walking for ten minutes daily, starting today." In creating these personal goals, patients serve as central players in the design of their own treatment. During follow-up visits, patient progress with goal achievement is reviewed and obstacles are identified and discussed. It is through consultation with the patient and with the other *MOVE-IT!* team members that strategies are developed to overcome obstacles to goal achievement.

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Exercise

Exercise is crucial to promoting a healthy lifestyle, regardless of weight loss. Any positive changes in daily activity can at least partially offset excess caloric intake. Thus, physical therapists serve a critical role in our *MOVE-IT!* clinic by assessing patients' functional abilities.

First, the patient's ability to exercise is evaluated, which involves testing the patient's strength, balance, and sensation. In addition, recent laboratory tests are reviewed in an ef-

fort to identify any reasons exercise should not be recommended. The physical therapist clearly delineates the patient's current levels of physical activity and involvement in a specific exercise program.

Next, the patient's safety and endurance is evaluated using the revised "get up and go" test and the "2-minute walk test." The first test is a timed test of functional mobility that is used in a variety of patient populations and has demonstrated acceptable interrater reliability.[23] The second test is a measure of disability and activity or performance level.[23] It has been modified in order to accommodate patients with limited ability to participate in a longer walking test. During the walking tests, pain is monitored with a visual analogue scale and perceived exertion is monitored with the Borg scale.[23,24]

Finally, short- and long-term exercise goals are established for the patient. Physical therapy follow-up visits include retesting of functional mobility and performance level; review of the current exercise program; tips for self-progression of the exercise prescription; and, when appropriate, revision of exercise goals.

MOVE-IT! rounds

The multidisciplinary team meets each week, following the individual patient visits for *MOVE-IT!* rounds. During this meeting, each discipline reviews the salient findings from the individualized assessments. The meeting facilitates the exchange and integration of ideas for individualized care, as well as provides an opportunity to corroborate successes and failures. Planning is made for follow-up visit content and timing. The meeting also provides time for administrative review and clinic oversight. On most weeks, brief teaching sessions are held, reviewing recent, obesity-related publications and discussing research endeavors related to *MOVE-IT!*.

PROGRAM OUTCOMES

To date, more than 100 patients, most of them male, have been treated through *MOVE-IT!*. Almost two thirds of these patients have a comorbid psychiatric disorder—most commonly posttraumatic stress disorder, a mood disorder, or an anxiety disorder.

Eighty-four patients have completed treatment. The average BMI of these patients is 42.6 kg/m^2, which is indicative of morbid obesity and reflects the serious obesity problem within the VA. Of the 84, 56 (67%) have lost weight while enrolled in *MOVE-IT!*. While average weight loss has been relatively modest (5.1 lbs), a significant number of patients have had substantial weight loss—up to 30 lb. Additionally, of the 28 patients who either failed to lose weight or who gained weight during the program, 12 (43%) changed their weight trajectory (comparison of net weight change in the year before and after the program).

CHALLENGES TO OUR PROGRAM

We have encountered several obstacles in establishing and maintaining the success of our program. For instance, earlier versions of the program were temporally open-ended, resulting in some patients spending an entire year enrolled in our care. This limited the number of new enrollees and the total number of patients treated. Currently, however, there are 16 to 20 patients enrolled in *MOVE-IT!* at any one time, and patients are enrolled for an average of five months. In addition, earlier versions of our *MOVE-IT!* program tended to see patients less frequently. Thus, in the current version, patients are given a finite "graduation" time, which may or may not be extended by a month or so if specific issues (such as pharmacotherapy) need to be addressed. The frequency of visits was increased to weekly by combining group and individual care dates, but true individual care only can be delivered on a monthly basis due to limitations in staffing.

Other challenges stem from the fact that most staff is present on a semi-volunteer basis. In fact, many staff often provide Level I and II (Group Care) during their lunch hour. Although we have been fortunate that the supervisors of the various participating providers have been extremely generous in rearranging schedules, other VAs with more prominent staffing shortages may not be able to accommodate staff who would like to be involved with a similar clinic.

A POSITIVE START

To date, population screening for overweight or obesity (that is, use of an electronic reminder to prompt providers to refer overweight or obese patients to *MOVE!*) has not come under the purview of our program, although this is a required component of such programs.[12] In addition, interventions for weight maintenance or relapse prevention have been limited. Nevertheless, our experience and limited data thus far support the conclusion that the program is successful in promoting weight loss and teaching weight management skills. We believe that an integral part of its success lies in the employment of a multidisciplinary approach to managing obesity. The combination of comprehensive medical, nutritional, exercise, and behavioral assessments; the development of individualized treatment plans; close monitoring of patient progress; and teaching of specific nutritional, behavioral, and

exercise skills tailored to each patient by a multidisciplinary team has been an effective strategy to address concurrent issues contributing to or resulting from obesity for each patient enrolled in our program.

Our results show modest but frequent success in terms of weight lost. This is similar to commercially available programs.[25] Our results additionally indicate, however, that our patients suffer from a disproportionate amount of diagnosed mental illness. It is not yet known if this factor unduly affects adherence or weight loss in *MOVE-IT!*.

Both of our group and intensive *MOVE!* programs appear to be relatively resource intense in terms of the number of staff involved versus patients treated. The numbers of patients seen in total, however, including both group and individual care, is far more than the number of patients who would be seen by the individual providers during a regular clinic session. Furthermore, even small reductions in weight with concomitant health improvements might be predicted to have larger, positive health outcomes in the long term. In fact, the Institute of Medicine found that weight loss of as little as 5% of total body weight was associated with a meaningful reduction in morbidity and mortality.[26]

Other multimodal interventions for obesity have shown poor long-term durability.[27] We have yet to collect this data but are hopeful that our *MOVE!* program's emphasis on sustainable lifestyle changes will bear more promising results. We note that our patients have an advantage in that they are allowed to return to our clinics whenever they perceive the need for a "booster." In this case, patients must be referred by their provider again through the same official channel, and in most cases will attend the three to four individual visits and the weekly group sessions one more time. Current enrollment does affect how long patients must wait before revisiting our clinic.

TIME FOR SWEEPING ACTION

The VA currently provides education to a large proportion of postgraduate medical trainees, sustains a highly advanced electronic medical record, and provides a unique framework for large-scale preventive medicine interventions.[28] *MOVE!* represents an opportunity to change the tide of medical complacency and expand the repertoire of evidenced-based interventions in the face of the obesity epidemic. In particular, areas for future consideration include expanding the research network across VISN and national *MOVE!* programs, which could be accomplished through enhanced communication, and expanding the educational component of the *MOVE!* program for staff and trainees alike. ●

Author disclosures

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