

# A Health Care Provider Intervention to Address Obesity in Patients with Diabetes

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An education program offered health care providers information to assess patients' daily calorie goal and prompted an increase in weight loss and dietician referrals.

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**O**besity is associated with a significant increase in mortality. It increases the risk of type 2 diabetes mellitus (T2DM), hypertension, hyperlipidemia, and coronary artery disease.<sup>1</sup> T2DM is strongly associated with obesity in all ethnic groups.

Medical nutrition therapy and weight loss are very important for DM management.<sup>2</sup> This includes providing education about diet modification, increased physical activity, daily calorie intake evaluation, and consistent carbohydrate intake. For patients with T2DM, health care providers (HCPs) should emphasize lowering caloric intake and inducing weight loss for those who are overweight (body mass index [BMI] between 25 and 29.9) and obese (BMI  $\geq$  30). This can improve glycemic control by decreasing insulin resistance. Initial recommendations for weight loss and physical activity are to lose between 5% and 10% of initial body weight and to accumulate at least 30 minutes of moderate physical activity over the course of most days of the week.<sup>3,4</sup>

Several formulas are available to estimate baseline caloric intake for weight maintenance. For weight loss of 1 to 2 pounds per week, lowering 500 to 1,000 calories from daily weight maintenance calories serves the goal. The American Diabetes Association (ADA) also suggests that HCPs recommend diet, physical activity, and behavioral therapy designed to achieve > 5% weight loss to overweight and obese patients with T2DM.<sup>5</sup>

Recognizing the clinical benefits of achieving weight loss in overweight or obese patients with T2DM, we aimed to increase the number of visits in the Endocrine Clinic at Central Arkansas Veterans Healthcare System (CAVHS) in Little Rock that addressed obesity, documented calorie goal for patients who are overweight or obese, and performed an intervention with further education for the patient.

## METHODS

The study population included veterans with either type 1 DM (T1DM) or T2DM with BMI > 25 on any DM control regimen. We performed a health record review of the eligible patients seen in the CAVHS Endocrine Clinic from June 1, 2016 to July 31, 2016 to determine the baseline percentage of visits that addressed obesity and provided weight loss advice to patients. We obtained a list of patients seen in the clinic during the study period from Strategic Management Service Services at CAVHS. We also obtained information that age, gender, medications, BMI, and last Endocrine clinic HCP assessment from the electronic health record. We reviewed the HCPs notes, including fellows and faculty who were involved in the patients' treatment, to determine whether their notes documented a BMI > 25 and whether they discussed an intervention for overweight or obesity with the patient. The CAVHS Institutional Review Board reviewed and approved the initiative as a quality improvement study.

## Intervention

Our clinic has a defined group of HCPs that we targeted for the intervention. After getting baseline information, during August 2017 we educated these HCPs on the tools available to calculate calorie goal for the patients. We advised the HCPs to use the Mifflin St Jyor equation for estimating energy expenditure and set a goal of initial weight loss between 5% and 7% of body weight. We gave specific instructions and advice to the providers (Table 1). HCPs also received educational material to distribute to patients that provided information on the healthy plate method, discussed how to count calories, and advised them on ADA goals with carbohydrate limitation. We encouraged HCPs to recommend that patients cut between 500 and 1,000 calories daily from their current diet. HCPs also received advice to seek help from clinical

dietitians and the VA MOVE! Weight Management Program when appropriate.

### Study of effect of the intervention

To study the effect of this intervention, we reviewed documentation by HCPs and assessed patient satisfaction. We obtained a list of patients and reviewed HCP notes on patients with BMI > 25 to assess whether providers addressed obesity in November and December 2017. We also evaluated whether HCPs offered a specific intervention to address the problem, such as providing education material to the patient or an estimate of daily calorie goal, or referring them to clinical dietician and/or the MOVE program. Patients received a 5-question survey that assessed their understanding and satisfaction at the end of the visit (Table 2).

## RESULTS

Of the 100 charts reviewed prior to intervention, HCPs discussed obesity management with only 6% of patients. After the intervention, we collected data again through chart review of the patients who were overweight or obese and seen for DM in the same clinic during a 2-month period. Of the 100 charts reviewed, we noticed that recognition and management of obesity improved to 60%.

To evaluate the impact of this intervention, patients received a questionnaire at the end of the visit. Nearly all (97%) patients mentioned that the provider discussed weight management during that visit. Most (83%) patients mentioned that weight management was discussed with them during prior visits, while 70% of patients felt their knowledge on working on weight loss had improved. Almost half (46%) were interested in further referral to a dietician or the MOVE program if they did not achieve desired results, but 78% were confident that they could implement the discussed weight management measures.

## DISCUSSION

Increased body weight is associated with worsening of DM and can result in poor glycemic control. Achieving weight loss in overweight or obese patients with DM can lead to clinical benefits; however, this is a challenge. In one study, a DM prevention program with lifestyle intervention leading to weight loss significantly reduced the rate of progres-

TABLE 1

### Provider Instructions

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|--|
| 1. Note patient body mass index  |
| 2. If overweight or obese, calculate daily calorie need with Mifflin-St Jeor equation  |
| 3. Advise patient to consume 500 fewer calories less than the calorie need, or if patient is not aware how many calories he or she is consuming, advice to be cognizant of that; advise patients to reduce about 200 cal per meal from current consumption |
| 4. Advise moderate exercises for ≥ 30 min for ≥ 5 d per wk   |
| 5. Provide information on plate method, carbohydrate, and calorie with portions, advise to use MyFitnessPal app (Under Armour, Baltimore, MD)  |
| 6. Offer to refer to certified diabetes mellitus instructor, or MOVE program as needed   |
| 7. Discuss obesity as a problem  |
| 8. Provide patient satisfaction questionnaire  |

TABLE 2

### Patient Questionnaire

|    |  |
|----|--|
| 1. | Did provider discuss weight management on current visit?   |
| 2. | Was weight management discussed on prior visits?   |
| 3. | How improved is your knowledge about weight loss measures? (10-point scale)                                    |
| 4. | How confident are you about implementing these measures?   |
| 5. | Would you be interested in further referral to dietician or MOVE program if we do not achieve desired results? |

sion from impaired glucose tolerance to DM over a 3-year period and improved cardiovascular risk factors like elevated blood pressure and dyslipidemia.<sup>6</sup> A randomized trial of an intensive lifestyle intervention to increase physical activity and decrease caloric intake vs standard DM education in people with T2DM showed a modest weight loss of 8.6% of initial weight at 1 year.<sup>7</sup> This weight loss was associated with significant improvement in blood pressure, glycemic control, fasting blood glucose, high-density lipoprotein (HDL) cholesterol, and triglyceride levels and significant reductions in the use of DM, hypertension, and lipid-lowering medications.<sup>7</sup> Obesity attributes to dyslipidemia with increased levels of cholesterol, low-density lipoprotein, very low-density lipoprotein, triglycerides, and decreased levels of HDL by about 5%.<sup>8</sup> Obesity also is associated with hypertension, coronary heart disease, heart failure, and cardiovascular and all-cause mortality.<sup>9</sup>

### Limitations

Limitations of this study include the small sample size and that multiple HCPs were involved. The nature of intervention might have differed with different HCPs or in a different setting than a VA clinic. In addition, we did not evaluate the effect on weight loss in specific patients as we only reviewed charts to check whether HCPs addressed weight loss. Nevertheless, our intervention was effective because it improved patient and provider awareness. It also gave us the opportunity to create framework for further collaborations and community building. The Endocrinology department at CAVHS is currently collaborating with the MOVE program, which is a part of the nutrition and food services. We hope to have an endocrinologist involved to provide guidance on medication management for obesity.

### CONCLUSION

At CAVHS a simple intervention was instituted to evaluate whether HCPs were discussing weight loss in patients with DM, providing them with information to assess patients' daily calorie goal, and prompting them for intervention to achieve weight loss. The intervention led to better management of patients with DM and obesity and greater engagement in weight loss from patients.

This project was a team effort. The clinic nurse documented patient's BMI on the check in slip. HCPs discussed the problem and specific intervention. The clinical dieticians provided focused education for patients. The clerks collected the patient responses to questionnaire. This project also improved communication within the Endocrine Clinic team. Documentation of HCPs pertaining to addressing obesity improved by 54%. Improved patient satisfaction and insight was evident on patient responses to the questionnaire.

We believe that HCP apathy is a major contributor to the problem of obesity. Small steps like these go a long way for further management of obesity. Most VA hospitals have MOVE programs that provide dietary advice and encourage behavioral changes. However, getting patients to commit to these programs is a challenge. Primary care and endocrine clinics are important services that may help with patient awareness.

This project helped us better recognize patients with obesity and provide them with initial counseling and dietary advice. We received

help from clinical dieticians and gave patients the option to join MOVE in situations where initial advice did not yield results and for more consistent follow up.

We tried to improve the care for patients with DM who were overweight or obese at CAVHS by prompting HCPs to focus on obesity as a problem and perform interventions to address this problem. The activities carried out and the data collected were used for internal quality improvement and for encouraging further interventions in the care of these patients.

### Author disclosures

The authors report no actual or potential conflicts of interest with regard to this article.

### Disclaimer

The opinions expressed herein are those of the authors and do not necessarily reflect those of *Federal Practitioner*, Frontline Medical Communications Inc., the U.S. Government, or any of its agencies.

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