

# Obesity Disease Management Opportunities and Barriers

Jaan E. Sidorov\* and Karen Fitzner†

### Abstract

SIDOROV, JAAN E. AND KAREN FITZNER. Obesity disease management opportunities and barriers. *Obesity*. 2006;14:645–649.

Disease management, a system of coordinated health care interventions and communications for chronically ill populations, relies on patient education and case management to engage individuals in the management of their condition. Disease management also aims to enhance the quality of interactions between doctors and patients and advance evidence-based medicine. Because these programs' interventions frequently include helping individuals who suffer comorbidities associated with obesity to reduce their BMI, adaptation of disease management to populations with obesity seems a viable option. A major barrier for implementing disease management for obesity, however, is the lack of proven return on investment, which limits health plan and disease management organization interest. Purchaser demand may overcome this reluctance. Further research is needed to objectively test whether disease management interventions would be clinically effective for obese populations, produce positive financial outcomes for insurers, and enhance workplace productivity.

**Key words:** disease management, weight loss programs, health insurance, bariatric surgery

### Introduction

Thanks to a “perfect storm” of multiple cultural and economic forces, two of three Americans, or an estimated

44.3 million persons, are obese (1). Direct medical costs from obesity consume 5.7%, or an estimated \$93 billion (2,3), of total U.S. health expenditures. Researchers have found an independent correlation between increasing BMI and insurance claims expense (4). According to one analysis, in a typical insurance pool of one million persons 35 to 84 years of age, obesity will account for 132,900 cases of hypertension, 58,500 cases of type 2 diabetes, 51,500 cases of hypercholesterolemia, and 16,500 cases of coronary heart disease (5).

### Gaps in Care

Despite the medical consequences of obesity, only 42% of adults recall getting nutrition advice from a health professional (6). The various causes for this include the time limitations of an outpatient visit, attention paid to other immediate health care issues, limited reimbursement for additional counseling, and physicians' skepticism about health promotion (7). Moreover, physicians may be unaware of the tools necessary to diagnose obesity (8) and are not immune from being overweight themselves (9).

### Employers and Health Insurance

Faced with the return of double-digit increases in health insurance premiums, employers are keenly interested in solutions that address health care cost and quality (10). Insurer-sponsored wellness and weight reduction programs help generate good will, provide a competitive advantage, and possibly attract lower-risk enrollees with healthy behaviors. However, insurers also recognize the limited impact of these programs in reducing claims expense.

Employers are also embracing care management programs designed for employees who suffer from other chronic illnesses. Given the apparent success of “disease management” (DM)<sup>1</sup> in improving quality and reducing

Received for review June 1, 2005.

Accepted in final form January 27, 2006.

The costs of publication of this article were defrayed, in part, by the payment of page charges. This article must, therefore, be hereby marked “advertisement” in accordance with 18 U.S.C. Section 1734 solely to indicate this fact.

\*Geisinger Health Plan, Danville, Pennsylvania, and †Disease Management Association of America, Washington, DC.

Address correspondence to Jaan E. Sidorov, Geisinger Health Plan, Hughes Center North, Woodbine Lane, Danville, PA 17822.

E-mail: jsidorov@thehealthplan.com

Copyright © 2006 NAASO

<sup>1</sup> Nonstandard abbreviations: DM, disease management; DMO, disease management organization.

cost among persons with chronic illness (11,12), applying DM to the burden of obesity would seem a natural next step.

### **What is DM?**

The Disease Management Association of America defines DM as “a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant” (13). DM is covered by health insurers with the intention of simultaneously reducing costs and increasing quality among populations with chronic disease. Typical DM relies on interventions designed to increase patient participation in the management of their chronic conditions. The majority of commercial insurers and self-insured employers offer some version of DM in their health insurance benefit, usually by contracting with one of the ~160 for-profit DM organizations (DMOs). These organizations’ total revenues are currently estimated to be \$750 million (14).

Most DM programs rely on nurses using face-to-face or telephonic outreach. Interactive voice response systems, videotape, web-based materials, and print media often accompany the interventions. There is also extensive physician outreach, including feedback regarding individual patients, clinical guidelines promotion, and other educational and support materials. Despite misgivings, many physicians welcome DM because its services are outside their ability or interest to provide. Because DM relies on alternate health care providers using phone or web-based counseling and follow-up, insurers welcome the efficiency of care interventions at a lower cost per unit of service.

### **Current Approaches to Obesity Treatment and the “Fit” with DM**

The U.S. Preventive Services Task Force has identified 29 clinical trials that studied counseling and behavioral interventions to reduce weight among obese persons (15). Most studied the impact on weight loss of counseling by non-physicians often using face-to-face interventions in a clinic setting. Average weight change in these studies was 3.3 kg (~7 lb). However, despite their documented success, these types of weight loss interventions are generally excluded from health insurance coverage unless it is necessary to treat an illness such as hypothyroidism, high blood pressure, or diabetes (16). Even if covered, insurers’ fee schedules for counseling are widely regarded by providers as inadequate, which further limits patient access.

### **Possible Role of DM**

The similarity of traditional counseling and behavioral weight loss interventions to DM is striking. Both rely on non-physician personnel outreach facilitated by information technology. Weight loss interventions relying on mail and

telephonic recruitment with remote counseling can be as successful as traditional clinic-based interventions (17). According to the U.S. Preventive Services Task Force, no one behavioral intervention has been shown to be superior to any other. Instead, “multimodal” interventions applied at an “intense” or at least monthly level were more likely to result in meaningful weight loss (15). Reducing excess weight among the obese would seem to be well suited to the six multimodal characteristics of DM described by the Disease Management Association of America (Table 1) (2).

The precise number of DMOs offering obesity DM and the number of commercial health insurers currently covering obesity DM are difficult to ascertain and subject to change. The switch of many employers from commercial to self-insurance arrangements with shifting benefit structures, as well as the increasing prevalence of beneficiary cost-sharing among a spectrum of insurance products (often offered by the same company), make this even more complex. However, according to one industry source, as of June 2004, only one DMO had begun to pilot a “stand alone” obesity DM, and insurers had few “mature” DM programs available from DMOs for their fully insured commercial plans (18). Since then, there has been a limited number of additional programs offered in the commercial health insurance market. Some examples include the recent announcement that Cigna will, through its relationship with American Healthways, make DM for “obesity-related illnesses” (but not obesity per se) available as of January 1, 2006, whereas a DM subsidiary of Wellpoint now includes “metabolic syndrome” among its programs (19). Other examples of DMO obesity offerings include QMed’s “Health e Weight” (20), as well as Matria’s obesity program (21).

### **Disease Management and Bariatric Surgery**

In contrast to the 5- to 10-lb weight loss achieved by conservative management, multiple case series have documented that bariatric surgery for severe obesity commonly results in a mean weight loss of 25 to 44 lb over 1 to 2 years, and a weight loss >40 lb for up to 8 years (22). Advocates point out that several studies using non-randomized control groups have shown considerable reductions in insurance claims expense that more than make up for the cost of the surgery (23). However, many insurers are becoming unconvinced that covering bariatric surgery is economically sustainable. Alarmed by the increasing prevalence of severe obesity, growing availability of weight loss surgery, and lack of randomized prospective studies, insurers have begun to exclude bariatric surgery from coverage (22).

However, for those insurers that continue to cover weight loss surgery, after-care is an important requirement, because these patients have considerable needs once they leave the hospital. DM, with its track record of closely monitoring, supporting, and educating individuals, could also identify

**Table 1.** Implications of obesity DM on its six components

Component of a DM program	Implication
Population identification processes	Typical clinical, demographic, and claims databases maintained by health insurers do not contain height or weight data fields that would, in turn, facilitate calculation of the BMI. As a result most insurers and health care providers do not know the prevalence of obesity in any population. This is readily addressed, however, and height and weight information can be collected during the course of an enrollment process or through a survey that can include height and weight along with zip code and telephone number.
Evidence-based practice guidelines	The NIH and Centers for Disease Control provide available guidelines on the topic. The peer review literature on obesity, which is the basis for the guidelines, comprises interventions that screen for obesity and offer counseling and behavioral interventions, while surgery is reserved for those with severe obesity.
Collaborative practice models to include physicians and support-service providers	The U.S. Preventive Services Task Force and NIH recommend that counseling be provided in the context of usual primary care. This is a setting well known to disease management. Furthermore, nurse-based interventions aimed at skill development, motivation, and support strategies for obesity would seem to fall within the competency of non-physician nurse disease managers.
Patient self-management education*	Self-management is consistent with the counseling and behavioral interventions commonly deployed by disease management in other illnesses, including diabetes, congestive heart failure, and asthma.
Process and outcomes measurement, evaluation, and management	The BMI at six months and one year is an established, retrievable, accepted, and reliable measure that can be easily followed as a dependent continuous outcomes variable.
Routine reporting/feedback loop†	Obesity can be followed with repeat measures of BMI and used as feedback for physicians and their patients.

DM, disease management.

\* May include primary prevention, behavior modification programs, and compliance/surveillance.

† May include communication with patient, physician, health plan and ancillary providers, and practice profiling.

and address dietary compliance among bariatric surgery patients and assist in provider follow-up.

**Barriers to Implementing DM for Obesity**

A 5- to 10-lb weight loss results in better control of blood pressure, diabetes, and blood lipid levels (2). However, among patients with obesity, these intermediate outcomes have not been definitely shown to translate into long-term benefit in morbidity or mortality. According to the U.S. Preventive Services Task Force, there is “less evidence for effects of weight loss on ultimate generally symptomatic outcomes,” and only “limited observational data” show that

intentional weight loss in obese persons can reduce mortality. There is only limited evidence that weight loss may reduce the incidence of diabetes among those with glucose intolerance (24,25).

Despite a positive correlation between obesity and insurance claims expense, there are also no prospective randomized studies that show that diet-based weight loss programs result in lower health care costs or reduced claims expense. The return on investment from avoided costs resulting from interventions for a population with obesity is unknown. We are unaware of any reports in the peer-reviewed published medical literature examining the success of DM for obesity based on the six components outlined in Table 1. It is also

unknown whether obesity treatment programs reduce the likelihood of progression to severe obesity and qualification for costly bariatric surgery.

### More Research Is Needed

Because weight loss is linked to better control of chronic diseases, DMOs have an important incentive to promote this among their patient populations. Despite this link, there are, to our knowledge, no published studies about the prevalence of obesity among DM enrollees. We speculate that the overlap of obesity, particularly in diabetes or cardiovascular disease management programs, is in excess of 50%, yet we are unaware of any published studies that assess the impact of obesity on achieving clinical or financial outcomes in DM for conditions such as diabetes or hypertension. Additional research will be necessary to assess how to identify candidates for DM in an insured population (e.g., using patterns of diagnosis codes used in insurance claims), define the disease burden from obesity in chronic illness, and gauge the impact of weight loss in areas such as clinical outcomes and insurance claims expense, among patients enrolled in DM.

Outside the context of chronic illnesses, the value of DM for obesity is even less clear. The paucity of studies showing that weight loss programs result in insurance-based cost-savings is an important barrier to the expansion of DM to the obese, because commercial third party payers typically demand evidence of a positive return of investment or reduced claims expense before supporting this. Pending further research, insurers are likely to limit DM to obese individuals with a comorbid chronic illness in their commercially insured populations.

However, nurse-based promotion of self-management with ongoing measurement and feedback has an intuitive “fit” with the needs of any insured population struggling with obesity. Skill development, motivation, and support strategies for obesity would seem to fall within the competency of nurse disease managers. In those rare instances where weight loss medications are included in a covered pharmacy benefit, DM could also help assure purchasers that these agents are being used effectively and safely. Finally, the for-profit DMOs would probably welcome any opportunity to expand their programs, as purchasers, despite insurers’ misgivings, demand coverage of obesity treatment as an insurance benefit.

As evidence of the preliminary interest of the DMOs and insurers in DM for obesity, the journal *Disease Management* published a supplemental issue dedicated to the topic (26), and the Disease Management Association of America convened a Health Care Leadership Conference in late 2004 addressing obesity control.

Given the need for innovative programs to combat obesity, DM success in other conditions combined with purchaser interest in obesity makes it likely that DMOs may

begin to offer DM programs for this condition. As this develops, considerable research will be necessary to gauge the clinical and financial impact of DM for obesity and assess the value it brings to controlling the obesity epidemic.

### Acknowledgment

During the course of writing this manuscript, Sanofi-Aventis provided a grant to the Disease Management Association of America for the study of obesity. The Disease Management Association of America used the grant to partially support K.F. J.E.S. is a non-salaried member of the Disease Management Association of America Board of Directors.

### References

1. **Mokdad AH, Marks JS, Stroup DF, et al.** Actuarial causes of death in the United States, 2000. *JAMA*. 2004;291:1238–46.
2. **National Institutes of Health.** *Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults*. Bethesda, MD: Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute; 1998.
3. **Wolf AM, Colditz GA.** Current estimates of the economic cost of obesity in the United States. *Obes Res*. 1998;6:97–106.
4. **Sansone RA, Sansone LA, Wiederman MW.** The relationship between obesity and medical utilization among women in a primary care setting. *Int J Eat Disord*. 1998;23:161–7.
5. **Oster G, Edelsbert J, O’Sullivan AK, et al.** The clinical and economic burden of obesity in a managed care setting. *Am J Managed Care*. 2000;6:681–9.
6. **Galuska DA, Will JC, Serdula MK, Ford ES.** Are health care professionals advising obese patients to lose weight? *JAMA*. 1999;282:1576–8.
7. **Kottke TE, Brekke ML, Solberg LI.** Making “time” for preventive services *Mayo Clin Proc*. 1993;68:785.
8. **Block JP, DeSalvo KB, Fisher WP.** Are physicians equipped to address the obesity epidemic? Knowledge and attitudes of internal medicine residents. *Prev Med*. 2003;36:669–75.
9. **Hash RB, Munna RK, Vogel RL, Bason JJ.** Does physician weight affect perception of health advice? *Prev Med*. 2003; 36:41–4.
10. **Institute on the Costs and Health Effects of Obesity at the National Business Group on Health (formerly the Washington Business Group on Health).** <http://www.wbgh.com/docs/obesityInstituteOverview.doc> (Accessed January 27, 2005).
11. **Villagra VG, Ahmed T.** Effectiveness of a disease management program for patients with diabetes. *Health Aff (Millwood)*. 2004;23:255–66.
12. **Sidorov J, Shull R, Tomcavage J, Girolami S, Lawton N, Harris R.** Does diabetes disease management save money and improve outcomes? A report of simultaneous short-term savings and quality improvement associated with a health maintenance organization-sponsored disease management program among patients fulfilling health employer data and information set criteria. *Diabetes Care*. 2002;25:684–9.

13. **Disease Management Association of America.** DMAA definitions of disease management. [www.DMAA.org](http://www.DMAA.org) (Accessed November 20, 2004).
14. **Disease Management Now a \$750 Million Industry, Research Triangle Park, NC, Jan. 25 /PRNewswire/ – Disease management.** [http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=AAHP\\_HEA.story&STORY=/www/story/01-25-2005/0002901633&EDATE=TUE+Jan+25+2005,+07:45+AM](http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=AAHP_HEA.story&STORY=/www/story/01-25-2005/0002901633&EDATE=TUE+Jan+25+2005,+07:45+AM) (Accessed March 22, 2006).
15. **McTigue KM, Harris R, Hemphill B, et al.** Screening and interventions for obesity in adults: summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2003;139:933–49.
16. **Morbid Obesity Help.** Insurance. <http://www.morbidobesityhelp.net/insurance.htm> (Accessed November 20, 2004).
17. **Jeffery RW, McGuire MT, Brelje KL, et al.** Recruitment to mail and telephone interventions for obesity in a managed care environment: the Weigh-To-Be project. *Am J Manag Care.* 2004;10:378–82.
18. **AIS Health.** Insurers build obesity disease management programs, eye employer reimbursement. <http://www.aishealth.com/ManagedCare/DM/MCWInsurersBuildObesity.html> (Accessed September 28, 2005).
19. **AIS Health.** Disease management programs target obesity, metabolic syndrome. <http://www.aishealth.com/ManagedCare/DM/MCWDMObesity.html> (Accessed September 28, 2005).
20. **QMed, Inc.** Health e weight. [http://www.qmedinc.com/patient\\_weight.php](http://www.qmedinc.com/patient_weight.php) (Accessed September 28, 2005).
21. **Matria Healthcare.** Obesity clinical summary. [http://www.matria.com/resources/clinical/dm/obesity\\_summary.html](http://www.matria.com/resources/clinical/dm/obesity_summary.html) (Accessed September 28, 2005).
22. **Villagra V.** A primer on bariatric surgery: treatment of last resort for morbid obesity. *Dis Manag.* 2004;7(Suppl 1):S23–30.
23. **Christou NV, Sampalis JS, Liberman M, et al.** Surgery decreases long-term mortality, morbidity, and health care use in morbidly obese patients. *Ann Surg.* 2004;240:416–23.
24. **Tuomilehto J, Lindstrom J, Eriksson JG, et al.** Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med.* 2001;344:1343–50.
25. **Knowler WC, Barrett-Conner E, Fowler SE, et al.** Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002;346:393–403.
26. **Mary Ann Liebert, Inc., publishers.** Disease management. <http://www.liebertonline.com/toc/dis/7/supplement+1> (Accessed March 22, 2006).