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## ***Making the Case for an Obesity Care Management Program***

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Through the past five decades, self-reported measures of height and weight indicate that obesity, defined as body mass index (BMI) greater than or equal to 30 kg/m<sup>2</sup>, is rising in every state in the United States. This is true for all ages, genders and racial groups.<sup>1</sup> The growth of the number of working age adults with the greatest amount of obesity, morbid obesity, exceeds that of the obese population in general.<sup>2</sup> Morbid obesity refers to patients with BMIs greater than or equal to 40 or who are 50 kg/m<sup>2</sup>- 100 percent—or 100 pounds above—their ideal body weight.<sup>3</sup> Although some<sup>4</sup> have questioned whether excess fat itself poses a serious health risk, others have identified it as a leading public health issue.<sup>5,6</sup> Sansone has shown a positive correlation between increasing BMI and insurance claims expense.<sup>7</sup>

### **Scope of the Issue**

The obesity epidemic is one that warrants great attention. An estimated 44.3 million Americans (two out of every three people) are overweight or obese.<sup>8</sup> The prevalence of morbid obesity increased nearly fivefold from about one individual in 2000 to one in 400 from 1986 to 2000.<sup>9</sup> Moreover, the problem is endemic in all age groups. In 1999, a national survey found that 16 percent of high school students were overweight and nearly 10 percent were obese.<sup>10</sup> It is likely the rates are even higher today, meaning that projections for future health care expenditures must account for obesity-related costs throughout the life span of very young individuals.

Precise health care expenditures associated with obesity are difficult to compute for a variety of reasons. One major challenge is identifying those in the obese population, because insurance claims data do not traditionally include BMI results. Orzano found BMI screening to have a positive predictive value of 97 percent.<sup>11</sup> BMI, however, is an imperfect metric.<sup>12</sup> Anyone with a BMI over 25 is classified as overweight, whether their body is short or tall, round or thin, or composed of fat or muscle. This means that athletes are often classified as obese. Hence, waist circumference has been proposed as a possible metric for determining overweight and obesity.

No matter how obesity is determined, its related expenditures fall into two main

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categories—treatment of obesity itself (direct cost) and treatment of related co-morbid diseases, most of which are chronic in nature. Direct costs, for example, are those associated with bariatric surgery and pharmaceutical management, two of the strategies available to treat, or at least address, obesity. Bariatric surgical interventions cost about \$35,000,<sup>13</sup> but can be higher if the surgery is accompanied by pre- and post-care management expenditures and possible side effects or complications of the surgery. Pharmaceutical management strategies are less costly in any one year but can add up over time. Containing these costs while improving health is essential.

**Obesity and obesity-related conditions, most of which are chronic, impact health as well as health care costs both directly and indirectly.**

**Consequences of Obesity**

Higher utilization and burgeoning medical costs are associated with increased risk factors for both chronic and acute illness and the presence of costly co-morbid conditions in obese populations. Direct medical costs from obesity are estimated to consume 5.7 percent or an estimated \$93 billion of total U.S. health expenditures.<sup>14</sup> Sturm has reported that obesity is associated with inpatient and outpatient expenditure increases of 36 percent and medication expenditure increases of 77 percent.<sup>15</sup> Mortality rates for obese persons are double the rates for normal persons, resulting in more than 300,000 deaths every year.<sup>16</sup>

These costs and mortality rates are attributable to co-morbid conditions associated with being overweight—cardiovascular disease, diabetes and cancer (breast, colon, uterine and ovarian) and have been causally linked to being fat. Fatness is also independently associated with hypertension, congestive heart failure, stroke, gallstones, gout, osteoarthritis, obstructive sleep apnea, complications of pregnancy, poor female reproductive health, bladder control problems, uric acid nephrolithiasis and psychological disorders.<sup>17,18,19</sup>

Obesity and obesity-related conditions, most of which are chronic, impact health as well as health care costs both directly and indirectly. As compared to people who are not obese, individuals who are obese have 77 percent higher medication costs and 36 percent higher inpatient and outpatient costs. As

noted above, among the cost drivers associated with morbid obesity are bariatric surgeries, which cost between \$25,000 and \$45,000.<sup>20</sup> According to one analysis, in a typical insurance pool of one million persons age 35-84 years, obesity will account for 132,900 cases of hypertension, 58,500 cases of type 2 diabetes mellitus, 51,500 cases of hypercholesterolemia and 16,500 cases of coronary heart disease.<sup>21</sup>

Estimates of weight-related Medicare expenditures are startling. One group has stated that: “Starting at age 70, an obese person will cost Medicare about \$149,000; Medicare spending on an obese person is 20 percent higher than for the overweight and 35 percent higher than spending on a normal person.” These costs negatively correlate with quality of life for this age group. Normal weight elders can expect seven disability-free years but their obese peers will only enjoy four and spend 40 percent more time being disabled than the slimmer individual.<sup>22</sup>

Many obesity-linked costs are indirect or hidden. For example, hospitals and clinics are adding adaptations such as reinforced gurneys and stronger/wider hospital beds. In another example, a recent study of 89 amputees in one prosthetics clinic found that average BMI was 27, indicating that the population tends to be overweight and many are obese. The two heaviest patients weighed 380 pounds each and required specially designed artificial limbs that can sustain this amount of weight.<sup>23</sup> The average cost of a prosthesis is \$5,000, but high-end prostheses, such as those required to sustain additional weight, can cost more than \$25,000.<sup>24</sup> Moreover, diabetes-related amputations, most of which are for the lower limb(s), cost approximately \$38,077 per amputation procedure.<sup>25</sup>

**Strategies for Addressing Obesity and Its Related Costs**

Because of the increasing prevalence of morbid obesity and increasing popularity of weight-loss surgery, coverage of the costly surgery as an insurance benefit has become controversial. Advocates point out that several studies using nonrandomized control groups have shown considerable reductions in insurance claims expenses that more than makes up for the cost of the surgery.<sup>26,27</sup> Some payers, including Medicare, have adopted the NIH criteria for bariatric surgery<sup>28</sup> while others are becoming unconvinced that covering weight-loss surgery is sustainable and limit coverage of treatment for obesity through exclusionary language. On July 15, 2004, the Centers for Medicare and

Medicaid Services (CMS) changed its policy on obesity so that Medicare now covers services related to the treatment of obesity as long as those services are integral to treatment and management of a co-morbid condition. But Medicare does not cover the treatment of obesity alone yet does pay for bariatric surgery when it is appropriate for other clinical issues.<sup>29</sup>

Pharmaceutical products that help block fat absorption are increasingly becoming accessible to obese individuals. The drug, orlistat, can be purchased in prescription form as well as over the counter.<sup>30</sup> In the future, additional drugs are likely to be available for the control of overweight and obesity, but their costs and benefits are yet to be quantified in insured populations. Surgical interventions are very costly and the costs of drugs to address obesity are uncertain, in large part because weight loss via drugs does not necessarily stay lost. Moreover, not all obese individuals are appropriate for bariatric surgery or are able to take “fat-busting” drugs.<sup>31</sup> Hence, most payers are looking to preventive and chronic care management interventions as an alternative or adjunct to surgery and drugs.

### Care Management as a Strategy for Addressing Obesity

According to the Disease Management Association of America (DMAA), disease management is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management:

- Supports the physician or practitioner/patient relationship and plan of care;
- Emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies; and
- Evaluates clinical, humanistic and economic outcomes on an ongoing basis with the goal of improving overall health.

The DMAA notes that full disease management programs have the following six components:

- Population identification processes;
- Evidence-based practice guidelines;
- Collaborative practice models to include physician and support-service providers;
- Patient self-management education (may include primary prevention, behavior modification programs and compliance/surveillance);



- Process and outcomes measurement, evaluation and management; and
- Routine reporting/feedback loop (may include communication with patient, physician, health plan and ancillary providers, and practice profiling).

Weight management services are integral to disease management programs for diabetes, congestive heart failure, back pain and other conditions in which co-morbid obesity may play a risk factor.<sup>32</sup> For chronically ill populations, the opportunity exists to better engage individuals in their care management to maximize their health and control costs. Chronic care management programs have a proven track record with diabetes and other such illnesses<sup>33,34,35</sup> and such techniques may also be applicable to overweight populations.<sup>36</sup>

Modest weight loss of 10 percent of body weight was shown by Goldstein to improve glycemic control and reduce blood pressure and cholesterol<sup>37</sup>. Despite this understanding and knowledge about the consequences of obesity, only about 40 percent of adults recall getting nutrition advice from a health professional.<sup>38</sup> Obviously, the status quo is not sustainable and more needs to be done to emphasize prevention, education and involvement of the patient in his own care.

While many disease management programs indirectly address obesity, a few such programs now aim to address obesity specifically. We conducted a scan of disease management programs that focus on overweight populations directly in September of 2005. The findings are presented in Table 1. In general, the programs that we identified

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gap remains and the risk to payers exists whether they cover treatment for obesity directly or indirectly. The lack of clearly defined and accepted metrics for determining the long-term success of obesity management is of concern and an impediment to the acceptance of cost-effective and efficacious interventions.

### Conclusion

The obesity epidemic poses clinical risks to overweight individuals that translate into financial risks that impact both public and commercial payers. The U.S. Department of Health and Human Services aims to reduce obesity in adults to 15 percent or less by 2010.<sup>40</sup> There is a link between increasing BMI and insurance claims expense, which is of particular interest to actuaries and health economists.

Obesity treatment, management or control is typically addressed medically by bariatric surgery or through care management and prevention programs. Chronic care management programs have a proven track record with related chronic illnesses and many individuals who have a comorbid condition are enrolled in disease management that addresses obesity indirectly. Disease management is frequently provided pre- and post-bariatric surgery, and is becoming a more popular offering as a stand-alone intervention because it is an attractive alternative to costly surgery. Consequently, new obesity disease management programs are becoming available.

Obesity disease management, albeit new, must demonstrate its value. Adoption of a viable obesity management solution is limited by a lack of metrics and data. Actuarial science can help by defining the metrics and models that will determine the value of an obesity management program's overall worth. 

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apply some of the techniques of chronic care management programs and are often integrated into disease management for co-morbid conditions. Some of the offerings are limited to being Web-based educational programs or lifestyle and behavioral change, such as those offering assistance with meal planning. While possibly beneficial, these limited offerings would not meet the DMAA definition of full disease management programs.

### Metrics Are Needed

Proof of success and defined evidence of the concept is necessary before obesity care management can become widely accepted. If resources are to be invested, effectiveness must be demonstrated. But, if, as noted above, it is difficult to identify obese individuals and calculate costs associated with morbid obesity, then determining if an intervention addressing obesity is cost-effective is even more elusive. The Congressional Budget Office noted that there is insufficient evidence to conclude that disease management programs in general reduce overall health spending although such programs could be worthwhile even if they did not reduce costs.<sup>39</sup> Before care management programs can be fully adopted for obese populations, new metrics are needed so that clinicians can accurately measure health improvements and financial types can assess the cost and benefit of those improvements.

For those individuals who are identified as obese, metrics exist with which to determine changes in quality of life for those who decrease weight or BMI by applying quality adjusted life years (QALY) techniques. Clinicians can measure weight loss or changes in BMI or waist circumference and benchmark that against the 10 percent figure offered by Goldstein. But, a measurement



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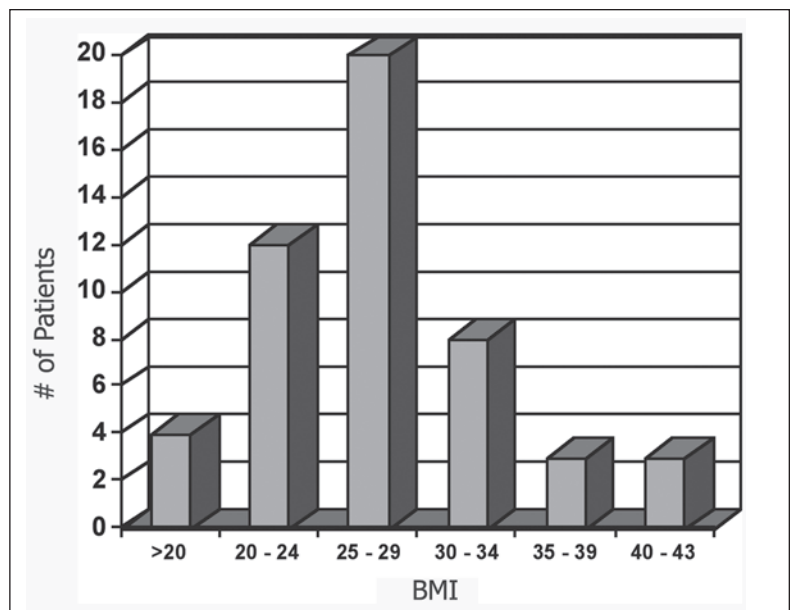
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<b>Table 1 • Entities Offering Disease Management for Obese Individuals and Populations</b>		
<b>DMO</b>	<b>Program</b>	<b>Comments</b>
American Healthways	Offering obesity disease management through Cigna.	Disease management program for obesity is being introduced in 2005.
Cardiocom, LLC (1, 3)	ThinLink; Pilot planned.	4 areas: lifestyle & behavioral change, assistance with meal planning, personal accountability and home monitoring tools.
Cardium (6)	Not a unique, stand-alone program. Part of integrated disease management program for back pain or diabetes.	Telephonic counseling and educational mailings to provide nutritional and stress management information.
Gordian	Not a unique, stand-alone program. Part of integrated disease management program for co-morbid conditions.	Offer a weight management program as an adjunct to co-morbid disease management.
Health Management Corp. (4)	Healthy Returns disease management program.	1/2005 Metabolic syndrome was added to the list of core chronic conditions in the disease management program.
LifeMasters	Not a unique, stand-alone program. Part of integrated disease management program for co-morbid conditions.	Part of integrated disease management program for co-morbid disease management programs.
Magellan Health Services (5)	Magellan Condition Care Management.	Multifaceted approach (nutrition, exercise, promotion of mental health and wellness by addressing cognitive & emotional issues) to help members lose weight and maintain that weight loss.
MSO Medical	Obesity Disease Management, CORI.	Non-interventional, medically supervised weight loss and surgical program.
Matria	Obesity disease management is part of integrated disease management program for co-morbid conditions.	Offering obesity management programs with individualized lifestyle plans, diets and exercise goals.
QMED, Inc., with Healthe Monitoring, Inc. (7)	Healthe Obesity Management.	Clinically-based approach to weight management with devices, technology and a care delivery system.
Resources For Living	Obesity Program.	A comprehensive weight loss program begun in 2003 with telephonic coaching sessions, personal health coach and registered dietitian.
Vista Medical (2)	VOW Solutions.	Morbid obesity disease state management model with behavioral and psycho-therapeutic elements both pre- and post-operatively.

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Health Plan	Status	Comments
Aetna, Inc. (1)(8)	Piloted October 2004	Telephonic counseling.
Blue Cross and Blue Shield Massachusetts (8)	Piloted.	Web-based disease management program developed for 2005; focus on children and teens
Cigna (9)	Being rolled out in 2005.	High-risk obesity disease management program CIGNA HealthCare.
First Health Group Corp. (1)	Developing.	To manage bariatric surgery cases on the front and back end.
Health Partners (8)	Ongoing.	Phone-based disease management program for targeted members; Web-based program available to all members.
Highmark (8)	Ongoing.	Web-based and telephonic health coaching and nutritional advice.
Horizon Blue Cross Blue Shield of New Jersey (1)(8)	Available to 180,000 HMO enrollees since 2004. Weigh to live pilot.	Health and wellness education and telephonic pilots for fully insured HMO members; Weigh to live pilot.
Kaiser (8)	Varies by region.	Child/teen programs available in most regions.
WellPoint (8)	Ongoing.	Weight management integrated into several disease management programs.

*Please note: The information contained in this table is from a scan that was not designed as a thorough and rigorous examination of disease management programs for overweight and obesity. It does, however, provide a sense of the types of programs that are available for managing obese populations.*

**Figure 1: Body Mass Index of 89 Amputees Attending a Prosthetics Clinic in 2005**



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