

Pathways toward Accessibility and Dignity: Design Strategies for Bariatric Patients

Masumi Izawa
DEA 6530
Fall 2009
Professor Frank Becker



Table of Contents

Introduction

The Bariatric Dilemma	3
The Design Dilemma	4
The Relevance of Bariatric Design	5

The Context: Auburn Memorial Hospital	6
--	----------

Creating a Bariatric Design Plan

Facility Assessment	7
Pathway Flow Chart	8

Design Recommendations

Entry	9
Accommodation	10
Transport	11
Family and Visitors	12

Costs and Benefits of Bariatric Design	13
---	-----------

Bibliography

References	14
-------------------------	-----------

The Bariatric Dilemma

BMI stands for body mass index and is the accepted method for how we categorize body weight.

Table 1. Age-adjusted* prevalence of overweight, obesity and extreme obesity among U.S. adults among U.S. adults, age 20 years and over

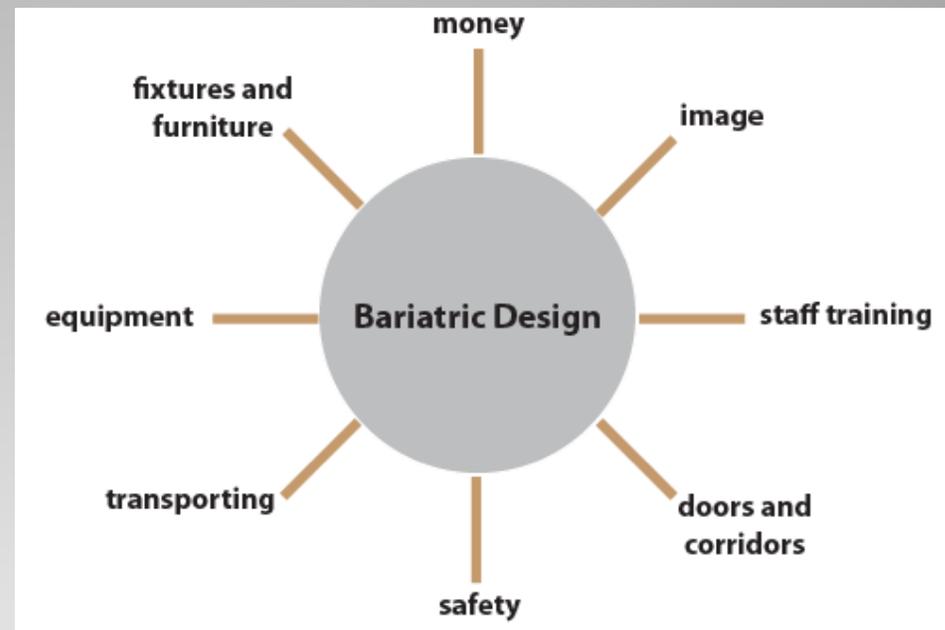
	NHANES III 1988-94 n=16,679	NHANES 1999-2000 n=4,117	NHANES 2001-02 n=4,413	NHANES** 2003-04 n=4,431	NHANES** 2005-06 n=4,356
Overweight (BMI greater than or equal to 25.0 and less than 30.0)	33.1	34.0	35.1	34.1	32.7
Obese (BMI greater than or equal to 30.0)	22.9	30.5	30.6	32.2	34.3
Extremely obese (BMI greater than or equal to 40.0)	2.9	4.7	5.1	4.8	5.9

Source: http://www.cdc.gov/nchs/data/hestat/overweight/overweight_adult.htm

Obesity is a steadily growing health concern among adults and children in the U.S. Numerous health conditions such as diabetes, stroke, cancer, and heart disease have been linked to obesity (Surgeon General, 2007). At the same time weight loss surgery (bariatric surgery) procedures have been gaining popularity and acceptance. These obesity-related trends will no doubt increase visits to healthcare facilities.

But are healthcare facilities ready and able to provide for this growing patient population known as the bariatric population?

[Physical] accessibility to healthcare facilities is of primary concern. From the moment a bariatric patient enters the facility to the point of discharge, facilities face spatial and operational challenges. These challenges have financial and organizational ramifications.



Barrier: The Americans with Disabilities Act (ADA) does not recognize obesity as a legal disability. As a result, ADA does not provide guidelines tailored to the obese.

Barrier: Adopting ADA guidelines is not suitable for bariatric design. Certain ADA guidelines, especially for bathrooms, are incompatible with bariatric weight requirements.

Barrier: The lack of formally established guidelines and “very little conclusive research to support industry recommendations” make it difficult for architects and designers to come up with solutions (Stroupe & Sarbaugh, 2008).

The Relevance of Bariatric Design

Why should healthcare facilities care about bariatric design?

1. The prevalence of obesity increases a facility's probability of encountering bariatric patients.

The number of overweight adults in the U.S. has dropped, but the numbers for **obese and morbidly obese** adults **continue to rise** (NHANES, 2008).

Obese people are at risk for **diabetes, stroke, heart disease, breathing problems, arthritis, and cancer** (Surgeon General, 2007). More health problems mean more visits to the hospital.

2. Bariatric surgery is a lucrative procedure which will mean profit for the facility.

The average cost of bariatric procedures is estimated at **\$20,000 to \$25,000** (WIN, 2009).

The American Society for Metabolic and Bariatric Surgery report that **205,000 people in 2007** had bariatric surgery compared to **103,000 people back in 2003** (WIN, 2008).

Some bariatric procedures, especially those that can reverse obesity-related illnesses, are now **covered by Medicare and health insurance providers** (WIN, 2009).

3. Making the facility more accessible reduces the risk of injury to patient and staff (Hignett et al., 2007; Tizer, 2007).

"Anecdotally, the **cost of equipment** to assist with the movement of obese patients **is significantly less than the costs of worker's compensation claims** related to staff injuries arising from assisting in the movement of obese patients" (Collignon, 2008).

Proper staff training, the utilization of appropriate equipment, and modifying the building can **prevent injury and litigation, and makes the patient more at ease** (as cited in Dartford & Gravesham NHS Trust, 2006).

The Design Dilemma in Context

6

Auburn Memorial Hospital (AMH) is a small, community hospital located in New York whose mission is to provide compassionate, quality care. As part of their quality and performance values, AMH is continuously striving to improve its facility design and services. Its Fingerlakes Weight Loss Center recently received accreditation as a Level 2b facility by the Bariatric Surgery Center Network Accreditation Program of the American College of Surgeons. With this accreditation plus the popularity of bariatric surgery and the statistic that 24% of adult New Yorkers are obese (CDC, 2008), AMH can expect to service more bariatric patients in the coming years. How should AMH go about addressing bariatric patient accessibility?



Quick Facts About AMH

four story building

capacity = 99 beds

central NY location with rural, non-affluent population

sole provider of acute and general hospital care within its vicinity

currently under renovation

non-profit organization

recently emerged from bankruptcy

having difficulty recruiting doctors and nurses

Facility Assessment

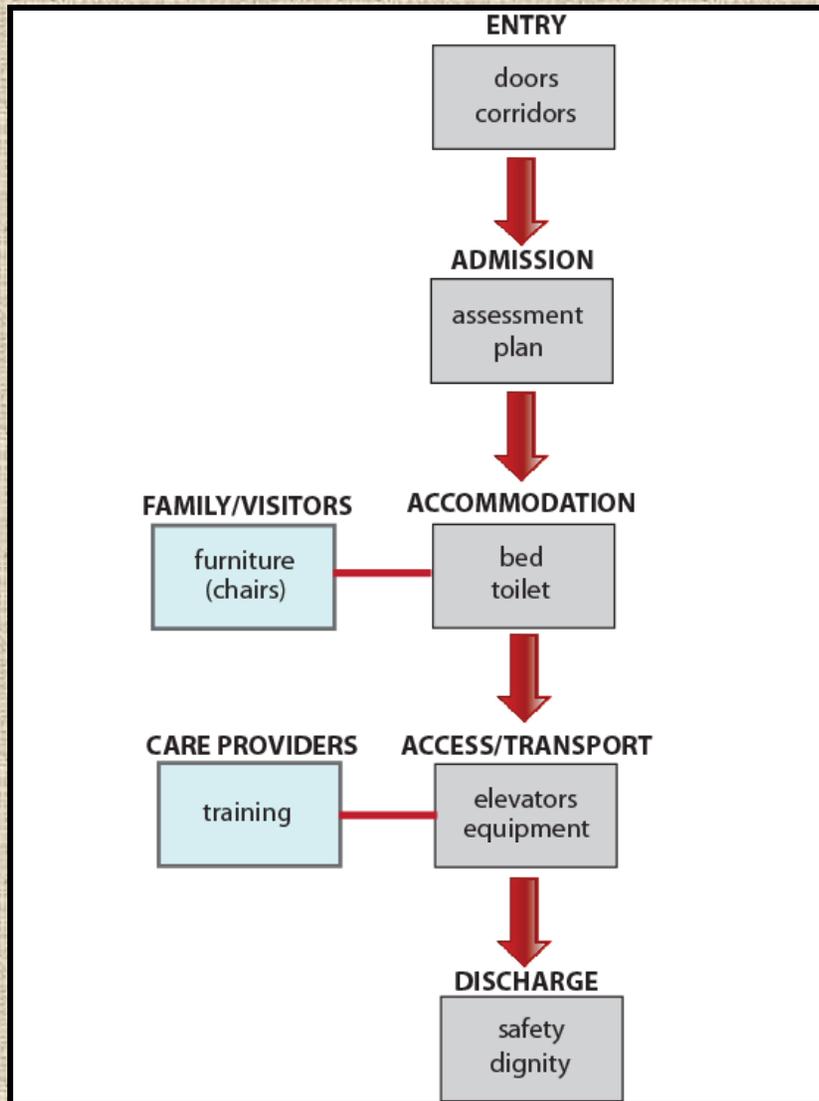
A facility assessment is recommended in order to gauge the current situation of the building layout; this will help in mapping out potential accessible pathways for bariatric patients (Andrade, 2004; Barista, 2005; Hignett et al., 2007; Cowley & Leggett, 2009).

In its facility assessment, AMH should take note of the following:

- access points of the facility and departments
- current door and corridor widths
- the size and location of elevators
- current size of rooms and bathrooms
- the adjacencies of departments
- current availability of bariatric equipment



Pathway Flow Chart



Two studies, a British (Hignett et al., 2007) and Australian (Cowley & Leggett, 2009), followed the hospital journey of bariatric patients. The studies emphasized devising "pathways" from the moment of entry to discharge. Utilizing this pathway concept and the problems identified from the studies, a flow chart was created. This chart guides the following design recommendations.

Recommendation: Access to Entry

Recommendations for door/corridor widths vary, however, the literature emphasize the importance of including the patient with equipment (bed, wheelchair, or walker) and staff as part of the total width required for clearance (Andrade, 2004; Barista, 2005; Hoover & Smith, 2005; Tizer, 2007; Collignon, 2008; Muir, 2009).

WIDTH
PATIENT WITH EQUIP.
+
AT LEAST 1 STAFF

Two types of doors emerged from the literature.



Source: Hoover and Smith, 2005.

1. A single door with a width measuring 45" to 60" (Collignon, 2008).



Source: Collignon, 2008.

2. A split 60" door or double-leaf door (45"+15") (Collignon, 2008; Muir, 2009).

Recessed hinges are recommended for doors because they permit the most amount of doorway width (Hoover & Smith, 2005).

Recommendation: Access to Accommodation

10



Source: Crook, 2009.

Getting in and out of bed is a challenging task for both patient and staff. Lifting devices may be required depending on the mobility of the patient. These devices can reduce the risk of injury to both patient and staff (Hignett et al., 2007; Tizer, 2007; Crook, 2009). Nonetheless, the premium for purchase and installation of these lifts can be costly.

For a small facility like AMH, a few rooms can be modified to allow lifting devices. Ceiling lifts may be expensive and require structural modification, but they would only require a small amount of floor space and less staff assistance (Muir, 2009).

Bariatric patients lacking mobility will require a lift or staff assistance to gain access to the bathroom. Those who are mobile should have access by way of handle bars. These handle bars need to be robust to support up to 800 pounds and the bathroom walls should have extra-strength blocking (Crook, 2009). These handle bars will also relieve the staff of some of the weight from the patient.

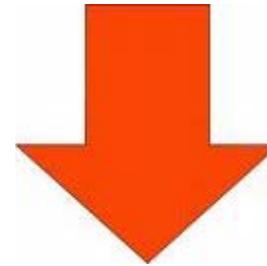
Making these structural modifications would be a wise investment for AMH. Around 12% of nurses leave the job due to back injuries and missed work days significantly incur with occupational injuries (as cited in Collignon, 2008). Having just emerged from bankruptcy, it is critical for AMH to stay afloat with staff retention due to recruiting problems.



Source: Crook, 2009.

Recommendation: Access to Transport

Many hospitals like AMH are multi-storied facilities. Using elevators will become essential in transporting bariatric patients, especially if the patient has co-morbidities and requires multi-departmental services. Understanding that AMH is limited in funds and is a small facility, it is recommended that AMH have at least one elevator that complies with bariatric weight requirements. This elevator should have access to all floors of the facility.



ELEVATOR DOOR
The door width should be at least 54" (4' 6") to allow clearance for a patient on a bariatric bed or wheelchair with the assistance of one staff, but 60" (5') is the preferred width (Tizer, 2007; Collignon, 2008).



WEIGHT CAPACITY: The average ambulatory facility elevator has a weight capacity of 2,000 to 3,000 lbs. (Tizer, 2007). This kind of elevator would not be sufficient in supporting a bariatric patient, a bed or wheelchair, equipment, and staff. A 6,000 to 6,500 lb. weight capacity elevator would be needed (Collignon, 2008).

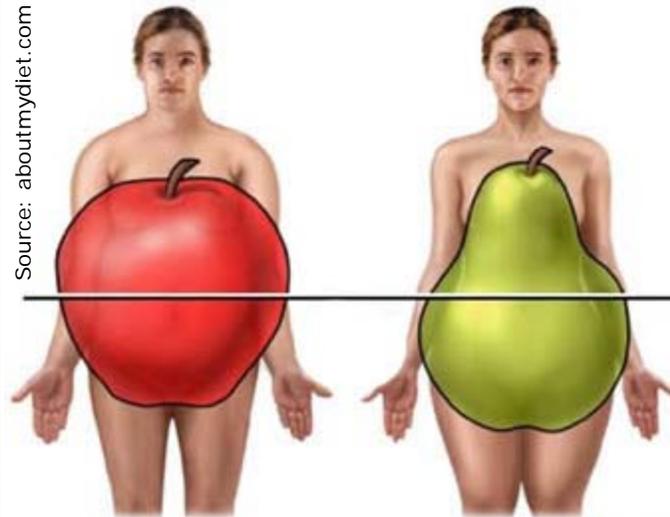
Barrier: Some of these suggestions, such as door widths, will not comply with building codes.

ELEVATOR LENGTH
Because a bariatric bed can measure up to 108" (9'), the elevator should have a length of more than this (Collignon, 2008).

Recommendation: Access for Family and Visitors

12

Science indicates that genetic factors are involved in obesity. This means that bariatric patients tend to have family members who are also obese. Facilities will have to be able to accommodate these family members and any visitors who are obese. Providing a bariatric-friendly environment is part of improving comfort and morale (Tizer, 2007). Purchasing bariatric furniture such as chairs is affordable and quick; no structural modification is necessary.



Equipment manufacturer Hill-Rom surveyed people and found out that people with apple-shaped bodies have a preference for chairs with arms while pear-shaped bodies prefer chairs without arms (as cited in Zanoni, 2006).

AMH should provide bariatric furniture for the possibility of patient family members and visitors being obese. Both types of chairs should be available to accommodate the two body shapes.

Costs and Benefits of Bariatric Design

13

Bariatric design is a long-term investment that has the potential to reap many benefits--- physical access, patient and staff safety, profit, and morale. St. Vincent Carmel Hospital opened a bariatric unit in 2003 and the two year before and after differences were astonishing. The hospital was able to increase its patient volume and was able to reduce inpatient costs by \$815 per patient (Hoover & Smith, 2005). Hoover and Smith note that “one of the most impressive stats is the hospital’s patient satisfaction percentage, which was in the 79th percentile among competing hospitals in April 2003 and soared to the 98th percentile a year later.”



St. Vincent Carmel Hospital (Source: Hoover & Smith, 2005)



Creating a bariatric-friendly environment fits with AMH’s mission and can make the facility financially viable and competitive based on the results from St. Vincent Carmel. Although there is an upfront premium for some structural features and equipment, and recruitment of more staff will be necessary, these can be done incrementally. The obesity and bariatric surgery trends make it physically and financially risky to not invest in bariatric design. Staff injuries, patient litigation, and inaccessibility to medical services are not favorable outcomes. Bariatric design can be viewed as a way to bring dignity to those who face constant discrimination due to their weight. What better way to improve one’s image than through offering dignity.

References

14

- Andrade, S. D. (2004). Planning and design guidelines for bariatric healthcare facilities. *AIA*. Retrieved on October 10, 2009, from http://info.aia.org/nwsltr_print.cfm?pagename=aah_jrnl_20061018_award_winner
- Barista, D. (2005). Designing for the obese. *Building Design and Construction*, 46 (11), 48-52. Retrieved on October 10, 2009, from <http://proquest.umi.com/pqdlink?did=931653001&Fmt=7&clientId=8424&RQT=309&VName=PQD>
- Center for Disease Control (CDC) (2009). Overweight and obesity: data and statistics: U.S. obesity trends. <http://www.cdc.gov/obesity/data/trends.html>
- Collignon, A. (2008). Strategies for accommodating obese patients in an acute care setting. *AIA Academy Journal*. Retrieved on October 10, 2009, from http://info.aia.org/journal_aah.cfm?pagename=aah_jrnl_20080930_collignon&dspl=1&article=article
- Cowley, S. & Leggett, S. (2009). The bariatric journey in Australia: hospital case study. Retrieved on October 10, 2009, from <http://www.safeworkaustralia.gov.au/NR/rdonlyres/FC2C655B-3C28-45BD-AA2A-431745821F4F/0/HospitalCaseStudy.pdf>
- Dartford and Gravesham NHS Trust (2006). Guidelines for the care of bariatric patients. Retrieved on October 20, 2009, from http://www.safeliftingportal.com/hottopics/documents/ORAPY8V7X0_Guidelines_on_the_Care_of_Bariatric_Patients.pdf
- Hignett, S., Chipchase, S., Tetley, A. & Griffiths, P. (2007). Risk assessment and process planning for bariatric patient handling pathways. Loughborough University. Retrieved on October 20, 2009, from <http://www.hse.gov.uk/research/rrpdf/rr573.pdf>
- Hoover, M. & Smith, K. (2005). Accommodating the bariatric patient: an increasingly obese patient population challenges hospital facility design. *HealthCare Design Magazine*, 9. Retrieved on October 10, 2009, from <http://www.healthcaredesignmagazine.com/ME2/dirmod.asp?sid=9B6FFC446FF7486981EA3C0C3CCE4943&nm=Articles&type=Publishing&mod=Publications%3A%3AArticle&mid=8F3A7027421841978F18BE895F87F791&tier=4&id=B29E4279332F4CFA9AD0B2B24A76E551>

References

15

- Muir, M. (2009). Space planning for the bariatric patient. *Bariatric Times, Design Perspective*. Retrieved October 10, 2009, from [http://bariatrictimes.com/2009/03/31/space planning for the bariatric patient/](http://bariatrictimes.com/2009/03/31/space_planning_for_the_bariatric_patient/)
- National Health and Nutrition Examination Survey (NHANES) (2008). Prevalence of overweight, obesity, and extreme obesity among adults: United States, trends 1960-62 2005-06. *U.S. Department of Health & Human Services, Center for Disease Control*. http://www.cdc.gov/nchs/data/hestat/overweight/overweight_adult.htm
- Stroupe, J. & Sarbaugh, S. (2008). Bariatrics defined: a closer look at requirements for heavier patients. *Health Facilities Management, 4*. Retrieved on October 10, 2009, from http://www.hfmmagazine.com/hfmmagazine_app/jsp/articledisplay.jsp?dcrpath=HFMMAGAZINE/Article/data/04APR2008/0804HFM_FEA_Interiors&domain=HFMMAGAZINE
- Surgeon General (2007). 2001 Report on overweight and obesity - section 1.2: health risks. *U.S. Department of Health & Human Services, Office of the Surgeon General*. Retrieved October 20, 2009, from http://www.surgeongeneral.gov/topics/obesity/calltoaction/1_2.htm#table1
- Tizer, K. (2007). Extremely obese patients in the healthcare setting: patient and staff safety. *The Journal of Ambulatory Care and Management, 30 (2)*, 134-141. Retrieved October 10, 2009, from <http://ovidsp.tx.ovid.com/spb/ovidweb.cg>
- Weight-control Information Network (WIN) (2009). Bariatric surgery for severe obesity. *U.S. Department of Health & Human Services, National Institutes of Health*, 08-4006. Retrieved October 20, 2009, from <http://win.niddk.nih.gov/publications/gastric.htm>
- Weight-control Information Network (WIN) (2008). Longitudinal assessment of bariatric surgery. *U.S. Department of Health & Human Services, National Institutes of Health*, 04-5573. Retrieved October 20, 2009, from <http://win.niddk.nih.gov/publications/labs.htm>
- Zanoni, C. (2006). Accessible medical beds. *Rerc-AMI*. Retrieved October 20, 2009, from http://www.rerc-ami.org/ami/tech/tr-ami-mu-008_beds/index.aspx