# Effects of Overweight and Obesity on Workers Compensation Claim Costs

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May, 2015

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# Background

It is well established that being overweight and/or obese is endemic in the the U. S. population.

- A Kaiser Family Foundation study in 2013 places the proportion of the U.S. population who are overweight or obese at 70% for males and 58% for females.
- The highest individual states are West Virginia at 74% and North Dakota at 75% for males - 63% and 59% respectively for females.
- The same proportions may well hold for workers compensation claimants, but available claim information tends to be gathered only for the upper end of the weight scale.

# Milliman Data

The data I will be presenting today is from Milliman's proprietary workers compensation claims management / case reserving software, LCase®.

This software is used by Milliman claims consultants to analyze and case reserve workers compensation claims for client assignments.

The nature of these assignments primarily focuses on "tail" claims, so this presentation will focus on the effects of being overweight or obese on the cost of tail claims.

# Milliman Data

The current LCase® database contains over 63,000 claim records from client assignments performed over the last 6 years (earlier versions contain several hundred thousand more records but were not used in this analysis as some key fields used were not present).

Claims from all major, and most smaller, states are present in roughly the proportion of these states' overall WC size.

Claims from national, regional and, in state carriers, state funds, and self-insured employers are all present.

Catastrophic medical claims and normal pain tail claims are both represented – generally in the proportion found in any large set of tail claims.

# Milliman Data

Of the 63,300 claim records from client assignments performed over the last 6 years, 50,250 are claims with incurred losses greater than $50,000.

The incurred losses in the LCase® database are unique in that less than ten claims consultants have independently calculated case reserves for each claim using the same software and using the same general assumptions and procedures. The case reserve portion of the incurred losses we will discuss today are very uniform and do not contain the same high level of variability normally seen across the industry.

The case reserves also are uniformly calculated with the same mortality tables, contain escalation assumptions for medical benefits, and have mortality ratings performed by the same small group of consultants - further enhancing the uniformity. Life medical benefits are generally projected for pain cases.

The resulting incurred losses include a substantial portion of what normally would be IBNR due to the life medical and medical escalation assumptions.

# Milliman Data

Information as to the claimants' height and weight is found in claim notes, the primary repository of such data in any claims system.

Claim handlers often work claims from beginning to end not knowing the claimants' weight or, if they see the information, they do not note it in the file materials; therefore, height and weight information is difficult to obtain.

The LCase® data fields can only be filled from available claim file information; therefore, not all claims have specific information as to the claimants' height and weight.

A total of 5,526 LCase® claims have height and weight recorded. In effect, a 10% sample of the claims with an incurred loss value greater than $50,000. The sample is biased toward larger claims however, as Milliman claims consultants generally actively seek out height and weight information only on higher cost claims.

# Sample Results

| LCase® Tail Claims with Incurred Losses > $50,000 and Weight Data | | | | | |
|---|---|---|---|---|---|
| Weight Category | Count | % | Incurred Loss $ | Average Claim Cost | % Of Average |
| Normal | 4,268 | 78.6% | $1,123,825,690 | $263,314 | 56.6% |
| Overweight | 430 | 7.9% | $662,048,730 | $1,539,648 | 331.2% |
| Obese | 638 | 11.7% | $603,594,146 | $946,072 | 203.5% |
| Extremely Obese | 54 | 1.0% | $73,560,665 | $1,362,235 | 293.0% |
| Morbidly Obese | 41 | 0.8% | $61,558,333 | $1,501,423 | 323.0% |
| Total | 5,431 | 100.0% | $2,524,587,564 | $464,848 | |



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# Discussion

Clearly, a tail claim for which the claimant is overweight / obese will be more expensive than a claim from a normal weight claimant - roughly two to three times the cost of the average of all the weight classes combined.

If we group normal and overweight claimants together as representative of the overall population (especially the male population) we see only a moderate increase from the addition of the overweight group.

| | Counts | Incurred Loss $ | Average |
|---|---|---|---|
| Normal & Overweight | 4,698 | $1,785,874,420 | $380,135 |
| Normal | 4,268 | $1,123,825,690 | $263,314 |

# Discussion

Obese claimants, however, are 2 to 3 times more expensive. Interestingly, the overweight claimants are more expensive than the obese claimants: 319% of the average vs 210% to 311% for the various obese classifications. This may be nothing more than judgmental differences between the higher end of overweight vs obese. It may also, in part, result from the use of normal mortality for overweight claimants, as opposed to mortality ratings for obese claimants.

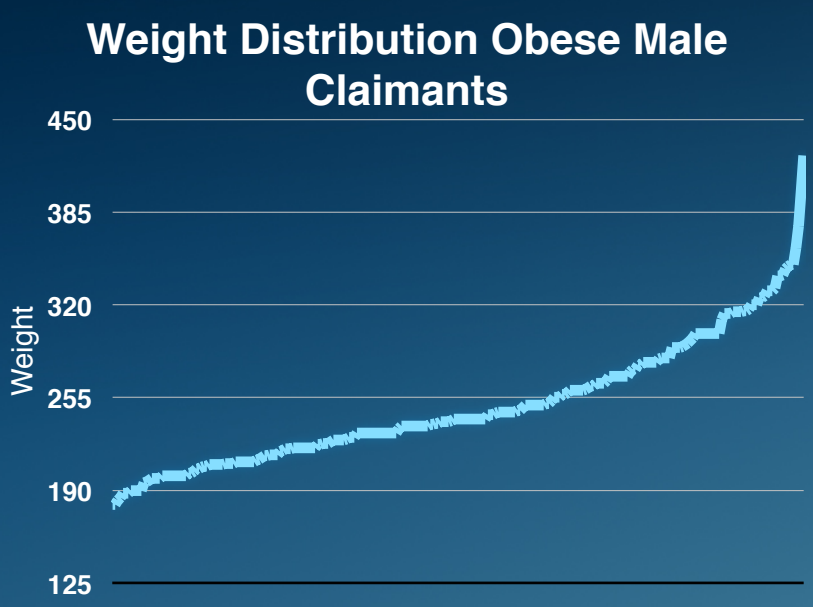
| | Counts | Incurred Loss $ | Average |
|---|---|---|---|
| *Overweight* | *430* | *$662,048,730* | *$1,539,648* |
| *Obese, all types* | *733* | *$738,713,144* | *$1,007,794* |
| *Overweight and Obese Combined* | *1,163* | *1,400,761,874* | *$1,204,438* |

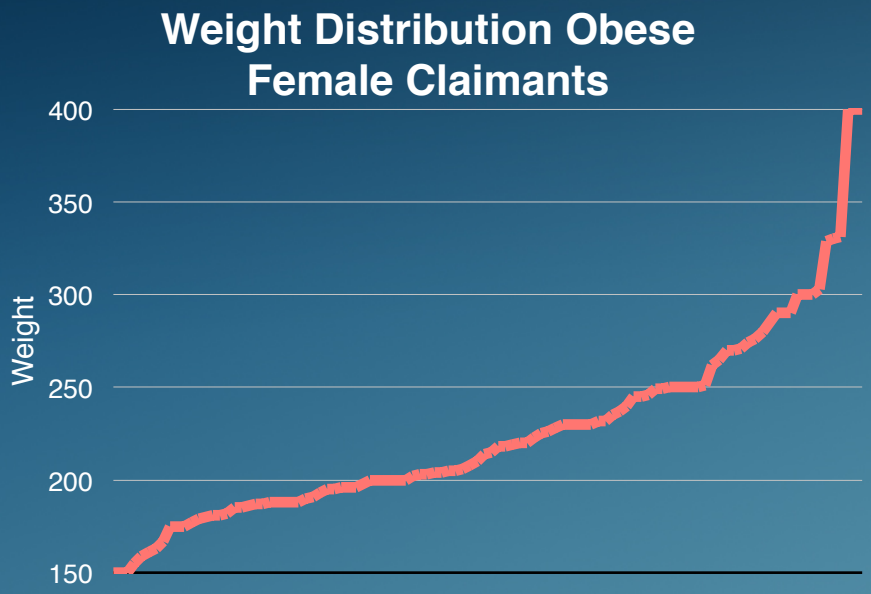
# Discussion

The distinction between extremely obese and morbidly obese is largely judgmental, to the extent that when I coded many of these claims I made the distinction when the claimant's weight exceeded 350 pounds, regardless of height. The use of substantial mortality impairments must be considered in the comparison of costs for these two categories as opposed to the lesser weight categories.

| | Counts | Incurred Loss $ | Average |
|---|---|---|---|
| *Extremely Obese* | *54* | *$73,560,665* | *$1,362,235* |
| *Morbidly Obese* | *41* | *$61,558,333* | *$1,501,423* |
| *Extremely and Morbidly Combined* | *95* | *135,118,998* | *$1,422,305* |

# Distribution by Weight




**Note: Heaviest Male is 425 pounds; Heaviest Female was 400 pounds at the time of the injury, but is currently 600 pounds**



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# Considerations in Cost Estimates for Obese Claimants

- First, and perhaps most important, the claim handlers should be aware of the condition which most often only comes to light when the first medical report is received.
- Obese claimants take longer to recover from a serious injury. Part of the longer time is the reluctance of most doctors to perform surgery, especially back surgery, on obese claimants.
- Losing weight and dealing with a work-related injury combined is much more difficult than either alone, prolonging the time period claims stay open.
- Obese claimants tend to have substantially more co-morbidities than normal weight individuals.
- Obese claimants are less likely to settle their claim at all and, if they eventually do, the settlements tend to be larger.