

Pre-Operative Clinical Variations by Health Insurance in Women with Obesity Do Not Resolve After Laparoscopic Roux-en-Y Gastric Bypass (LRYGB)

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Background:

Women are 80% of LRYGB patients. However, variation by health insurance pre- and post-LRYGB specifically in women has not been investigated.

Objective:

To identify variations by health insurance status pre- and post-LRYGB among women.

Materials & Methods:

- 65,325 LRYGB women analyzed in 4 groups: Medicare (4291), Medicaid (3932), Private (48385), and Self Pay (3932).
- Data: age, race, BMI, and the percentage frequency of 30 obesity co-morbidities.
- Statistics: Continuous variables by ANOVA. Dichotomous variables general linear models modified for binomial distribution.

Results:

- Medicare oldest (54+-12 years), Medicaid youngest (41+-11 years) p<0.0001.
- Medicaid highest African-American (17.4%), Private highest Caucasian (75%), Self highest Asian (0.3%) and Hispanic (15.1%), p<0.0001.
- Baseline through 24 months Medicaid BMI was highest and Private lowest, p<0.0001.
- All 29 obesity co-morbidities varied significantly by insurance pre-LRYGB, as did 26/29 12 months and 24/29 24 months.
- Pre-LRYGB Medicare highest in 18 co-morbidities, Medicaid 9, Private 1, and Self-Pay 1.
- 12 months Medicare highest 9, Medicaid 15, Private 2.
- 24 months Medicare highest 9, Medicaid 13, Private 1, Self-Pay 1.
- In 92% of significant variations either Medicare (45%) or Medicaid (47%) were highest.
- In 93% of significant variations either Self (78%) or Private (15%) were lowest.

Discussion:

- Pre-op variations by health insurance persisted through 24 months in LRYGB women.
- Medicare highest co-morbidities pre-LRYGB resolved more than Medicaid, who had highest, especially pulmonary and psychological issues, at 12 and 24 months.
- Surgeons should recognize high Medicare risks pre-LRYGB and increased Medicaid co-morbidity retention post-LRYGB.

Table 1: Weight-related medical conditions pre-operative, at 12 months and at 24 months

	Pre-operative		12 months		24 months	
	High	Low	High	Low	High	Low
Cardiovascular:						
CHF	Medicare 5.9	Self 1.3	Medicare 4.5	Self 0	Medicaid 3.8	Self 0
Leg Edema	Medicare 38.7	Self 25.79	Medicaid 25	Self 9.3	Medicaid 25.4	Self 8.82
Hypertension	Medicare 75.7	Self 52.23	Medicare 48.4	Self 22.3	Medicare 47.2	Private 23.9
Angina	Medicaid 4.96	Self 1.36	Medicare 3.19	Self 1	Medicare 4.62	Self 0
PVD	Medicare 2.49	Self .64	Medicare 1.59	Self .33	Medicaid 2.7	Self 0
Pulmonary:						
OSA	Medicare 55.26	Self 38.51	Medicaid 33.7	Self 17	Medicare 30.7	Self 13.24
PHT	Medicare 6.08	Self 3.36	Self 3.33	Private 1.1	Medicaid 2.16	Self 0
Asthma	Medicaid 30.8	Self 14.35	Medicaid 28.3	Self 10.67	Medicaid 31.4	Medicare 19.1
OHS	Medicare 4.17	Private 1.36	Medicaid 3.62	Self .33	Medicaid 8.11	Private .87
Abdominal:						
GERD	Medicare 58.38	Self 44.23	Medicaid 38.0	Self 15.7	Medicaid 40.5	Self 13.24
Cholelithiasis	Medicare 32.26	Self 20.8	Medicaid 36.5	Self 18	Medicaid 37.8	Self 16.2
Liver Disease	Medicare 8.11	Self 5	Medicare 7.42	Self 3.67	Medicaid 11.4	Self 1.47
SUI	Medicare 36.22	Self 29.9	Medicare 25.0	Private 17.7	Medicare 26.1	Self 13.2
Hernia	Medicaid 6.43	Self 44.23	Medicaid 7.45	Self 2.67	Medicaid 7.57	Self 2.94
Panniculitis	Medicaid 11.5	Self 7.08	Medicaid 10.74	Self 5.67	Medicaid 12.4	Self 5.88
Psychological:						
MHD	Medicaid 22.61	Private 1.07	Medicaid 22.8	Self 10	Medicaid 28.7	Self 5.88
Depression	Medicare 52.7	Self 36	Medicaid 49.6	Self 27.7	Medicare 43.9	Self 29.4
Psych Impair	Medicare 32.86	Self 16.9	Medicaid 32.2	Self 33.3	Medicaid 41.1	Self 8.82
Tobacco Use	Medicaid 9.51	Self 5.45	Medicaid 9.15	Private 3.91	Medicaid 10.27	Self 4.13
Alcohol Use	Private 32.7	Medicare 18.2	Private 22.3	Medicaid 13.9	Self 26.5	Medicaid 11.4
Substance Abuse	Medicaid .86	Private .33	Medicaid 1.06	Private .23	Medicaid 1.62	Self 0
Endocrine:						
Diabetes	Medicare 53.3	Self 34.2	Medicare 23.5	Self 8.67	Medicaid 22.1	Private 9.09
Dyslipidemia	Medicare 54.8	Self 39.78	Medicare 37.7	Self 14.7	Medicare 37.0	Self 16.2
PTC	Private 2.61	Self 2.18	Medicaid 2.66	Self 1	Private 2.33	Medicare 1.65
Gout	Medicare 5.31	Self 1.36	Medicare 4.55	Private 1.27	Medicare 4.29	Self 0
PCOS	Self 7.54	Medicare 3.75	Private 5.65	Medicare 3.27	Private 4.63	Medicaid 2.31
MSK	Medicare 57.63	Self 54.1	Medicare 47.3	Self 18	Medicaid 43.2	Private 25.3
Back Pain	Medicare 61.55	Self 47.05	Medicare 49.9	Self 25.7	Medicare 46.5	Self 26.5
IES	Medicare 11.42	Self 2.18	Medicare 8.45	Self 1.33	Medicare 4.95	Private 1.3

CHF=congestive heart failure, PVD=peripheral vascular disease, OSA=obstructive sleep apnea, PHT=pulmonary hypertension, OHS=obesity hypoventilation syndrome, GERD=gastroesophageal reflux disease, SUI=stress urinary incontinence, MHD=mental health diagnosis, PTC=pseudotumor cerebri, PCOS=polycystic ovarian syndrome

All pre-operative variations were P<0.0001.
 All 12 month variations were p<0.0001, except for PVD (p=0.002) and PCOS (p=0.014). Liver disease, panniculitis, and PTC did not vary by insurance.
 All 24 months variations were p<0.001 except alcohol use (p=0.001), SUI and gout (p=0.003), PVD (p=0.03), substance abuse (p=0.0007) and tobacco use (p=0.013). Hernia, panniculitis, PCOS, PTC and PHT did not vary by insurance.