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Insurance Status and Obesity as Predictors of Cost in Trauma Care

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INSURANCE STATUS AND OBESITY AS PREDICTORS OF COST IN TRAUMA CARE

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Abstract

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Insurance is a vital factor in the billed cost to the patient, but to what degree does insurance explain the amount a patient is left to pay? Also, does obesity further influence patient's billed cost? This thesis assesses the type of thoracic trauma patient, insurance status, and their billed cost. Database variables were analyzed in IBM SPSS 25. Table 1 characteristics were evaluated based on demographics and systematic hospital factors. Linear regressions used *Private0_Government1* and *BMI Obese n_y_* as independent variables while *Total Patient Cost* was the dependent variable. *Private0_Government1* insurance explained .03% of *Total Patient Charges. Private0_Government1* and *BMI Obese n_y_* explained 1.4% of *Total Patient Charges. Private0_Government1* and *BMI Obese n_y_* explained a low percentage of *Total Patient Charges*. This shows that there are factors other than insurance type and obesity that are influential upon patient charges.

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LIST OF ABBREVIATIONS

BMI	Body Mass Index
ACA	Affordable Care Act
PPO	Preferred-Provider Organization
HMO	Health Maintenance Organization
ICU	intensive care unit
TEA	thoracic epidural analgesia
ISS	Injury Severity Score
LOS	length of stay

CHAPTER 1: INTRODUCTION

This manuscript looks in depth at insurance status and obesity as predictors of patient costs. The sample of data of obese patients that have experienced thoracic trauma hold one of various types of insurance including Medicare, Medicaid, or Private. Health insurance is compensation available for future monetary assistance.

Businesses rely on costly operations to provide specialized services to customers in hopes of a future profit. Hospitals operate in a similar way; they endure costs to provide services to patients, those services have a price tag. While some services may be covered in benefits, other services are billed to patients. Patients may choose to rely on insurance to help with the financial burden of hospital cost.

Problem statement: Insurance type of obese trauma patients as a predictor of patient cost.

Sub problems: Economic effects, insurance coverage, health complications.

Significance: To assess the degree of influence of insurance type and obesity in a trauma patient population.

De-limitations: The data in this manuscript was de-limited to only 1 medical database. Although the data is valid and the analysis are sound instruments for epidemiological evaluation, this is potentially not the only set of medical data collected on thoracic trauma patients in the United States.

Hypothesis: I hypothesis the type of insurance of obese thoracic trauma patients predicts billed cost, respectively. Government subsidized insurance (Medicare, Medicaid) will cover more of the hospital cost, resulting in lower billed cost to the patient. Comparatively, private insurance coverage will cover less of the hospital cost, resulting in a higher billed cost to the patient.

Assumptions: I assume insurance coverage varies between patients affecting their amount of billed cost. Also, I assume that a patient with a higher BMI, a measure indicative of obesity, will need extended health care due to physiologic complications from excess adipose tissue.

Definition of Terms

Billed cost: The cost that a patient incurs from their respective hospital duration.

Obese: A body mass index, BMI, of >30kg/m2.

Thoracic: The area in the middle of the torso.

Trauma patients: Persons admitted into a hospital based on the need for medically driven care due to physical injury.

Insurance: A public or private program that financially protects policyholders via compensation.

Insurance coverage: Obtainment of certain health care services with partial or no monetary obligations at the time of service. Coverage varies between insurance programs based on individual needs, income, and/or employment.

Premiums: Monthly out of pocket cost to hold insurance coverage.

Deductibles: An out of pocket expense paid for by policyholders before insurance will help with payment(s).

Co-insurance: A shared payment of expense between a policyholder and insurance provider. This figure is typically expressed as a percentage.

Out of pocket expense: Any payment made by the policyholder. These expenses are capacity driven. An out of pocket limit must be met before insurance pays for the entire care expense. Deductibles and co-insurance payments are included in the out of pocket expense limit.

CHAPTER 2: REVIEW OF THE LITERATURE

To assess trends and major findings associated with insurance, hospital cost, and obese trauma patients I extend a review of the literature. I reviewed peer-reviewed articles, research articles based on the foundation of insurance programs, and company and government websites. The articles were found on University of the Pacific's library academic database as well as the Journal for American Medical Association (JAMA). The review began with specific search criteria including words: Hospital cost, Medicaid, Medicare, Obesity, Patient Charges, Private insurance, thoracic trauma. The websites that were of use include healthcare.gov and medicare.gov. The spotlight of this review is focused around two questions. Insurance is a vital factor in the billed cost to the patient, but to what degree does insurance explain the amount a patient is left to pay? Also, does obesity further influence patient’s billed cost?

The Impact of Insurance Status on Patient Cost

An insurance holder is granted services and financial protection by an insurer based on a specified contract. In this context of healthcare, the contract details the premium, health coverage, and subsidies (if needed) of the agreement. Insurance providers offer different plans for people to choose the coverage that best suits their individual health care needs. In California, the main health insurance providers are Kaiser Permanente, Blue Shield/Blue Cross, and UnitedHealthCare. Insurance plans are typically based on a person's individual income, household size, and age. Again in this context of healthcare, health insurance is typically structured around doctor and hospital networks. In simple terms, a network is a connection between doctors/hospitals and the insurance provider. The benefit of choosing a doctor and/or hospital in-network is typically shown as a lower rate for services compared to a doctor/hospital that is out-of-network.

Insurance uses lower rates and covered benefits to hedge against the liability of paying high fees for health services. Individual and family insurance plans are offered by providers for people who wish to buy coverage for themselves and dependents. Other types of insurance are offered by the federal and state government for persons over 65 and persons unable to afford private coverage. Federal and State Marketplaces are established to compare different coverage options.

Insurance Type

Private insurance is sought out by individuals looking to purchase coverage for themselves and dependents. This type of insurance is not employer or government funded rather it is funded by individuals. Insurance providers offer individual/family plans with networks to best serve people who choose to elect this option. Networks of doctors and physicians include PPO and HMO options.

The ACA, established in 2010, sought to help every citizen acquire a level of insurance coverage. This legislative act brought forth the Health Insurance Marketplace, an online resource for individuals to compare and facilitate acquisition of coverage. "The law has 3 primary goals:

- Make affordable health insurance available to more people. The law provides consumers with subsidies ("premium tax credits") that lower costs for households with incomes between 100% and 400% of the federal poverty level.
- Expand the Medicaid program to cover all adults with income below 138% of the federal poverty level. (Not all states have expanded their Medicaid programs.)
- Support innovative medical care delivery methods designed to lower the costs of health care generally." (U.S. Centers for Medicare & Medicaid Services, paragraph 2).

Medicaid insurance is funded by the federal government and facilitated by each state. Each individual state holds the discretion of implementing the degree of Medicaid. This is typically based on the need for this type of insurance within the given state. Medicaid is geared toward low income persons. For example, in California, Covered California is the state Marketplace of insurance plans offered by providers including Blue Shield, Anthem Blue Cross, and Kaiser Permanente to name a few. Medi-Cal is California's Medicaid program.

Medicare, also a federally funded insurance program, is offered exclusively to persons over the age of 65 and/or disabled; yet persons under 65 may be eligible in some circumstances.

Premium. Premiums are monthly payments from insurance holders to insurance providers to benefit coverage. Premiums are very standard to acquire insurance coverage, although some plans may elect to wave the monthly payment.

While Premiums may be optional in a Medicare type plan, a private plan requires monthly payments. The amount a person pays in premium fees depends on the specific plan option. A plan that opts for a lower premium may require a higher deductible and vice versa. “The amount depends on the plan you choose, where you live, and the age of each person on the policy.” (Blue Shield of California, section 3).

Deductibles, co-insurance, co-payments. On top of premiums, there are other cost associated with holding insurance coverage and the use of health care services. These three factors influence the amount a person could pay for services rendered. Deductibles are an out-of-pocket cost that patients are responsible to pay. After a deductible is financially met, insurance and patients share in the cost for care services. Co-insurance is the rate that establishes the amount the insurance will pay and the amount a patient will pay for care services. Co-payments are typically fixed cost that a patient will pay each time they receive a service.

Deductibles, co-insurance, and co-payments are relative to a person and their insurance provider. Although these costs are technical in nature, the rate of each is important to recognize. The type of person and their health needs explains which insurance plan would best suit their situation. For example, a person who decides to pay a higher premium may pay a lower deductible and vice versa.

Plan Category	**The insurance company pays**	**You pay**
Bronze	60%	40%
Silver	70%	30%
Gold	80%	20%
Platinum	90%	10%

Figure 1. (U.S. Centers for Medicare & Medicaid Services, Plan category).

In our dataset, at face value we can see each patient's total billed cost, their charges per LOS, and the number of days they stayed in the hospital. We would have to dig a little deeper into each individual plan that a patient holds to determine their respective insurance offering. It would be hard to measure a patient's specific premium cost and their associated deductible, co-insurance, and co-payment with only our dataset. While insurance is a very important factor to assess with a population like thoracic trauma patients, we must be weary that we can't explain the insurance details other than the type. Again, at face value we can only assess the degree of financial difference between each type of insurance.

Insurance status may be largely dependent on the type of person. While there may be discrepancies in the monetary coverage by insurance provider on total patient cost, we must also examine the variability in the type of patient. Each patient's services and insurance status are different based on their individual needs and choices. It would be simplistic to state that insurance coverage is the same for each patient while each trauma patient are not the same people and do not require the same needs for care based on their injury and health status.

The Impact of Health Status on Patient Cost

Hospital utilization, health status, discharge destination and charges per LOS are factors that influence patient cost. The extent to which a patient *uses* hospital resources and the associated LOS may depend on their health status. Discharge destination is the preferential location to continue care after leaving the hospital.

Hospital Utilization

Hospital utilization is the use of resources through the duration of hospital admission. Factors that affect hospital utilization include ICU, TEA administered, the number of days at the hospital, and ISS. Utilization rates are tracked for summation of total expenses per patient.

As hospital resources are supposed to benefit a patient's health, they might not be as beneficial to the patient's incurred cost. The patient decision to use hospital resources may lay with the need for care and/or the willingness to pay for services. This may be true based on the type of patient. Patient's may be weary of hospital utilization depending on the cost associated with each service. This may influence the decision-making process to use hospital resources. LOS may be dependent on the prior decision to use hospital resources.

The Emergency Medical Treatment and Active Labor Act, established in 1986, was created to provide people acceptance into the emergency room regardless of insurance status. This was explained in Santry's article in conjunction with hospital utilization, "Not surprisingly, emergency department (ED) resource use in response to health shocks has been shown to be independent of insurance status." (Santry et al 1066). Santry illustrates the analysis of variance in insured and uninsured patients. "However, patients were more likely to be injured as a result of blunt trauma and had higher anatomical measures of injury severity (as measured by the Injury Severity Score) after health care reform" (Santry et al 1068). He draws a relationship between the chance a population becomes injured with their corresponding insurance status. This connection illustrates the possibility that insurance status alone influences the degree of hospital resource utilization. From that standpoint we could further make the connection that the degree of hospital resource utilization influences the billed cost to the patient.

The duration of hospital stay may depend on the individualized injury along with insurance status. Simply stated, a patient admitted to the hospital may need more care based on the severity of injury. As stated in Englum's article, "Restricted to more severely injured patients, the association became even more pronounced. Publically insured patients with an ISS ≥ 9 stayed in the hospital for an additional 1.4 (95% CI: 1.1–1.6) days relative to privately insured patients, whereas patients with an ISS ≥ 15 stayed in the hospital for an additional 1.9 (95% CI: 1.6– 2.3) days". (Englum et al Page 4). ISS has been shown to be associated with insurance status and an increase in LOS. Although this may be a sound analysis, injury severity alone could be a strong underlying reason for the level of LOS. Patients that have increasingly higher ISS compared to patients who have lower ISS may *have* to increase the length of their hospital admission based on their need for resources. "Instead, the most severely injured patients, who often have the least choice in their care and are the most resource intensive, bear the heaviest burden of this disparity in resource usage." (Englum et al Page 6). Injury severity varies across patients depending on factors such as mechanism of injury, previous injury history and health status.

Charges per LOS. Charges per LOS defines a value to the length of stay for patients. The summation of this variable determines the net amount of charges for hospital stays aside from the cost of utilization. Factors such as ISS, # of ribs fractured, and recovery rate could influence the length of hospital stays. "Additionally, clinical factors associated with increased HLOS, such as injury severity [8, 9], lower GCS, and the presence of certain comorbidities, as found here, may help identify specific patient groups at higher risk for longer HLOS and discharge delays." (Sorensen et al Page 8). This article conducted research on the effects of discharge destination and insurance on Traumatic Brain Injury patient's discharge delays. While a different population than thoracic trauma patients, the idea that the time spent admitted in a hospital could differ between individuals based on their injury and health status.

***Obesity*.** Basic physiology relies on a certain level of fat for normal maintenance, any amount that exceeds this level is at risk of being converted into storage. Obesity describes the anatomical physique of a person with excess stored adipose tissue. Maintaining adequate adipose tissue is functionally necessary for systematic efficiency but an excess amount may dampen the ability of organs to function normally. Obesity is the difference in the degree of adipose tissue that exceeds the necessary amount for basic functioning.

The types of food consumed plays an important role in the prevalence of excess adipose tissue. Food is broken into categories depending on their respective nutritional content. Macronutrients are carbohydrates, proteins, and fats while micronutrients are vitamins and minerals; metabolism of these nutrients vary. Carbohydrates provide a natural source of energy while proteins provide structure and cell growth. Lastly, fats work as a vehicle of transportation while vitamins and minerals help organ efficiency.

Clinically, the determination of obesity is expressed with an objective BMI value. Within our dataset, a person with a BMI defined >30kg/m2 is considered to fall within the obese category. BMI is a spectrum based on numerical values assigned to a person's stature based on their weight divided by height. This spectrum is used in a variety of settings to assess a person's health. This value is robustly a standard measurement, it may be useful for baseline and follow up assessments.

Physical obesity can be broken into 2 categories depending on the location of stored adipose tissue. Gynoid adipose tissue is stored disproportionately in the hips and thighs as opposed to android adipose tissue which is stored disproportionately in the visceral abdominal area. While each type is disproportionate, gynoid and android adipose tissue influence the physiologic function of the body very differently.

Health complications. Thoracic trauma patients may experience extended hospital LOS and further complications due to their health status. The ribs are a crucial area in the body because of their proximity to major organs. The ribs are responsible for protecting the lungs and may be helpful in breathing mechanics. "The most complications in these patients contain respiratory failure as a result of altered chest wall mechanics from the fractures and respiratory distress from fracture-associated pain. Primary pulmonary contusion plays a noticeable role in the hypoxia that advances after chest wall injury." (Kinsara et al 480). Fractured rib bones may alter the function of the lungs. This altered lung function may be a risk for damage, overuse, and external care. "This complex pathophysiology often requires endotracheal intubation, prolonged intensive care unit length of stay,prolonged mechanical ventilation, and tracheostomy[5].Moreover, poor pulmonary function and mechanical ventilation rise the danger for the development of pneumonia, which is a frequent cause of death [6].Numerous factors such as age, the total number of fractures, and the presence of bilateral fractures have been shown to contribute to the morbidity and mortality related with thoracic wall injury." (Kinsara et al 480). Kinsara states that an alteration in the chest wall hinders the normal function of the lungs. This complication associated with damage to the chest wall mechanics could result in an increase in length of hospital stay and utilization. This theory may be important to recognize in a population such as thoracic patients because they have severely damaged this bodily region. Their chances for altered lung function from damage to their chest wall could increase.

Disproportionately high levels of adipose tissue in the visceral/abdominal area, also known as android type obesity, may contribute to the development of other health complications within a thoracic trauma patient population. The effect of visceral obesity may be important to recognize as a factor in utilization of services. Kinsara et al explained thoracic wall injury as a cause of potential worsening effects within the thoracic region. An injury like so, could change breathing mechanics, cause a pulmonary contusion, and require the need for external machines that increase mortality. Any of these worsening effects may add to the need for more resources and utilization during hospital stays.

There may be sex specific differences in obese thoracic trauma patients. Table 1 shows a trending significance that men hold a higher percentage of obesity over women. While our data does not explicitly share this information, it would be interesting to assess the relationship that men hold with visceral type obesity. If there was a significant relationship with men and visceral obesity, there may be reason to believe that men may be more likely to experience higher levels of health complications due to thoracic trauma. In general, sex specific differences could affect the degree of thoracic trauma.

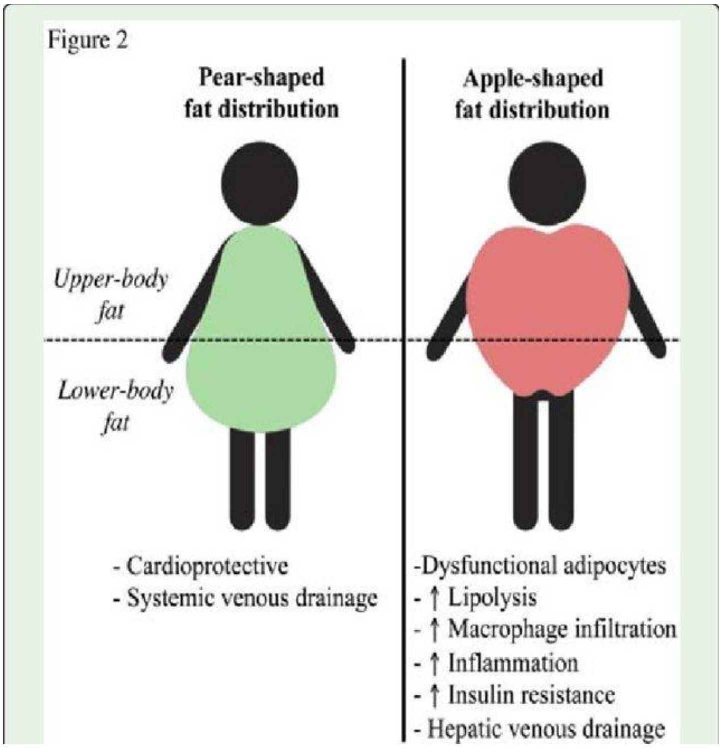

Figure 2. “Figure 2: Fat distribution and cardiovascular risk. Increased intra-abdominal/visceral fat (upper-body or apple-shaped obesity) promotes a high risk of cardio metabolic diseases, whereas increased subcutaneous fat in the thighs and hips (lower-body or pear-shaped obesity) exerts Little or no risk and may be protective.”. (Feijóo-Bandín Figure 2).

Though obesity may not be the primary reason for hospital admissions, there may be further need for care in this population. The diminished effects on physiologic function due to excess levels of adipose tissue may call for more care, longer stays in hospital admission, and/or more technological need for treatment. Aside from the proximity to major organs, the muscular-skeletal pathologies, chronic diseases, and inflammation resulting from excess adipose tissue storage may also explain an increase in patient utilization of services.

Patients choose between various locations during the time immediately following their discharge from the hospital. Locations include transferring to a rehabilitation facility, home care, or home self-care. There may be influence from the location of the recovery period following hospital discharge on patient cost. The hospital delays as shown in Sorensen et al findings illustrates extended LOS.

Discharged health behaviors. Even though hospital utilization factors like high ISS and health status could increase LOS, another factor such as discharge delay could also account for an extended stay. Sorensen et al demonstrates strong evidence that there is a discharge delay for patients that have been clinically allowed to leave the hospital. "Our finding that the most common causes of delay were insurance processing and authorization and lack of available beds at the discharge destination, in conjunction with the findings of previous studies, imply that a complex network of approval and communication between insurance providers and discharge locations exists that has the potential to result in lengthy HLOS and discharge delays." (Sorensen et al Page 8). Patient cost may continue to increase whether the primary reason is more resources or a delay in communication.

The individualized factors such as hospital utilization, health status, charges per LOS, and discharged health behaviors could impact patient cost. Each service provided while admitted to the hospital depends on the severity of injury and previous health status of the patient. Injury severity and health status could dictate how long a person needs care which explains their respective LOS. This is reflective in the charges per LOS, while the charges themselves may be similar across the population, the LOS variable could be the difference in the gross charge figure. These factors are deemed individualized because of the variability between patients. Since there is variability between patient factors there must be variability between total patient charges.

CHAPTER 3 METHODOLOGY

The Sources of Data

St. Vincent Hospital in Indianapolis, IN was the source of the data.

Data Instruments

After collection, data was inputted into IBM SPSS 25 Data Editor. IBM SPSS 25 Data Editor was used to run all analysis in this manuscript. Subject, type, values, and measure data were important to run all analysis efficiently.

Procedure. The data I used in this manuscript is from a medical database. This is not the initial analytical assessment of this database. After attainment of the database, I was able to evaluate what sort of question I was interested in researching. I started my analysis with a characteristic evaluation followed by prediction statistics.

Analysis of the data. Table 1 characterizing demographic, characteristic, and hospital data based on grouping of Men vs Women. Within Table 1, I ran descriptive and frequencies to characterize demographics. Independent Samples T-Test, and Chi Squared were used to assess for significance between grouping mean variables. Significance was assessed as $p<.05$. After running the analysis for Table 1, I ran a linear regression to show insurance as a predictor of patient cost. I ran a multiple linear regression to show BMI obesity and insurance as predictors of patient cost. Regression analysis made the most logical sense to run because of the prediction scenario.

Measures of Data

Total Patient Charges

Total patient charges were recorded for each patient as the net dollar amount of charges based on the duration of hospital stay, treatment associated with injury severity, # of ribs fractured, and insurance coverage. The range of total patient charges is as followed: $2,448.00 is the minimum total charge and $1,487,194.31 is the maximum total charge. The mean value of total patient charges is $89,209.3043 with a standard deviation of 123094.5825.

Chargers per LOS Days

Charges per LOS is defined as the dollar amount based on length of stay in the hospital. The length of stay for a patient is the duration of days admitted in a hospital for treatment. The range for charges per LOS is as followed: $789.41 is the minimum charge per LOS and $60,926.89 is the maximum charge. The mean value of charge per LOS is $9,343.3011 with a standard deviation of $5,805.54755.

Age

Age is defined as the chronological value denoting a person's year since birth. The range of age values is as followed: 15 years is the minimum and 98 is the maximum. The mean value for age is 55.48 years with a standard deviation of 20.288.

BMI

BMI, body mass index, defined as height divided by weight. BMI is widely used as a standard for assessing obesity. BMI could be used as a baseline and follow up measurement. The range of BMI values is as followed: 15.0 is the minimum and 56.0 is the maximum. The mean value for BMI is 28.326 with a standard deviation of 6.5941.

Obesity

BMI was also assessed as a binary category for frequency analysis. The 2 obese categories: No, not obese or yes, obese, is based on the BMI values. With 520 not obese patients, they explain 38.7% of the sample. With 308 obese patients, they explain 22.9% of the sample. With a total of 828 patients with 516 missing data points, not obese or obese accounted for 100% of this sample.

Transfer to Another Rehab Facility

Transfer to another rehab facility is the grouping associated with patients who decide to continue treatment at an alternative facility for rehabilitative services. With 172 of the patients that transfer to another rehab facility, they accounted for 12.8% of this sample.

Home Health

Home Health as the next treatment location is the grouping associated with patients who decide to continue treatment at home. With 64 patients in home health, they accounted for 4.8% of this sample.

Home/Self Care

Home/Self Care as the next treatment location is the grouping associated with patients who decided to continue treatment for themselves at home. With 575 patients in home/selfcare, they accounted for 42.8% of this sample.

Private_Government Insurance

Private insurance is funded primarily by individual persons. Government insurance is funded by federal and state government entities. There are 860 private insurance holders, accounting for 64% of this sample. There are 480 Government insurance holders, accounting for 35.7% of this sample.

ICU

Intensive Care Unit, abbreviated ICU, is a hospital unit for patients that are deemed in need of extra care due to a critical health status. ICU data was analyzed to examine patient's *ICU yes* and *ICU n.* With 675 patient's *ICU yes*, they accounted for 50.2% of this sample. With 669 *ICU no*, they accounted for 49.8% of this sample.

TEA Administered

Thoracic Epidural Analgesia, abbreviated TEA, is a drug used to manage pain. TEA administered data was analyzed to examine patients that *no TEA use* and patients *TEA administered*. With 1096 patients with *no TEA Used*, they accounted for 81.5% of this sample. With 248 patients with *TEA Administered*, they accounted for 18.5% of this sample. With 1344 total patients assessed, they accounted for 100% of TEA administered data in this sample.

Hospital # of Days

Hospital # of days is defined as the duration of calendar days that a person was considered a patient in the hospital for treatment of a condition. In this study, ribs fractured from a certain mechanism of injury was the condition of interest. The range of hospital # of days is as followed: 1 is the minimum day that a person was admitted and 84 is the maximum days. The mean value of hospital # of days is 8.67 with a standard deviation of 8.931.

Injury Severity Score

Injury Severity Score, abbreviated ISS, is an ordinal data set based on 4 categories. The 4 categories of ISS are minor, moderate, severe, or critical. Particularly, the binary category: *ISS_critical_y_n*, was chosen for frequency analysis. With 1135 patients representing *not a critical ISS*, they accounted for 84.4% of this sample. With 209 patients representing *Critical*

ISS, they accounted for 15.6% of this sample. The total of 1344 patients accounted for 100% of the sample.

# of Ribs Fractured

The # of fractured ribs is defined as the numerical value associated with a rib that was deemed physically cracked or broken; a rib that had deviated from normal physical attribute. The range of fractured ribs is as followed: 1 is the minimum # of ribs fractured and 24 is the maximum # of ribs fractured. 4 is the mean value of ribs fractured with a standard deviation of 3.003.

CHAPTER 4: RESULTS

Table 1
Characteristic Data of Sample

	Mean	Men	Women	Sign.
Age	55.48	52.52+/-18.739	61.60+/-21.961	P=.000
# of ribs fractured	4	4.07+/-3.065	3.86+/-2.867	P=.234
BMI	28.326	28.697+/-6.2950	27.592+/-7.1041	P=.029
% ISS Critical	15.60%	16.30%	14.00%	P=.264
% ICU	50.20%	47%	57%	P=.001
# of hospital days	8.67	8.98+/-9.409	8.03+/-7.819	P=.053
% obese	22.90%	39.30%	33.10%	P=.082
% transfer to another rehab facility	12.80%	14.70%	16.80%	P=.000
% home health	4.80%	5.60%	5.90%	P=.000
% TEA	18.50%	18.70%	17.80%	P=.692
% home/ selfcare	42.80%	55.90%	42.40%	P=.000
Total Patient Charges	$89,209.30	$93,924.4951+/- 127953.6308	$79,422.8556+/- 111847.8743	P=.034
Charges per LOS	$9,343.30	$9,450.7776+/- $5564.55909	9120.4597+/- $6,276.62983	P=.329
Private	64%	70.80%	50.50%	P=.000
Government	35.70%	29.20%	49.50%	P=.000

Table 1 shows the mean and standard deviations derived from the descriptive and frequency dataset. I ran an Independent Samples T-Test to compare the groups means from the descriptive data. The scale data includes age, # of fractured ribs, BMI, Hospital # of days, Total Patient Charges, Charges per LOS, Private, and Government insurance. The results from the Independent Samples T-Test showed men were a younger aged population that had higher number of fractured ribs, BMI and hospital # of days. It was interesting to notice that the mean total patient billed cost was $93,924.4951 and $79,422.8556 for men and women, respectively. This data shows that on average men pay more for their hospital admission compared to women.

On average, men hold more private insurance compared to women; vice versa for government insurance. This factor alone could account for the variability in patient charges.

Table 2
Linear Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.056[a]	.003	.002	$122,949.75105

a. Predictors: (Constant), Private0__Government1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	94325.049	4192.552		22.498	.000	86100.359	102549.740
	Private0__Government1	-14281.455	7005.033	-.056	-2.039	.042	-28023.499	-539.411

a. Dependent Variable: Total_Patient_Charges__sept2016

The linear regression I ran used *Total Patient Charges sept2016* as the scale dependent variable. The binary data, *Private0_Government1*, was used as the independent variable. The coefficient table produced, showed that the (constant) unstandardized coefficient is 94325.049 while *Private0_Government1* is -14281.455. *Private0_Government1* was coded with variables as followed: 0 for Private Insurance and 1 for Government Insurance. Since this independent data was categorized as binary, I used the linear regression equation to account for specifics according to Private and Government. The linear regression equation is y=a+bx. The variable y is defined as the dependent variable; in this case the dependent variable is *Total Patient Charges*. The variable a is the constant, 94325.049. The variable b is the *Private0_Government1* value of -14281.455. The variable x is defined as the variable value that is assigned to either Private or Government.

Total Patient Charges=94325.049+(-14281.455 X *Private0_Government1)*

Total Patient Charges=94325.049+(-14281.455 X 0) = 94,325.049 *Private*

Total Patient Charges=94325.049+(-14281.455 X 1*)* = 80,043.594 *Government*

These equations explain that on average there is a $-14281.455 difference between Private and Government Insurance. Government insurance holders reported a -14281.455 lower patient charge than Private insurance holders.

R is the strength of the correlation between insurance type and patient cost. In this regression, R equals .056. This numerical value shows that insurance type and patient cost do not have *that* strong of a relationship relative to a perfect correlation of 1. R squared is the variation that is explained by our insurance variable. R squared is reported as .003. Times this number by 100%, insurance explains 0.03% of the variation. This low R squared deems that there are other factors that are influencing *Total Patient Charges.*

Table 3

Multiple Linear Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.120[a]	.014	.012	$122,352.51577

a. Predictors: (Constant), BMI_obese_n_y, Private0__Government1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	83617.079	6357.759		13.152	.000	71137.724	96096.433
	Private0__Government1	-12567.202	8903.818	-.049	-1.411	.158	-30044.097	4909.694
	BMI_obese_n_y	27135.576	8830.683	.107	3.073	.002	9802.233	44468.919

a. Dependent Variable: Total_Patient_Charges__sept2016

After running a linear regression, I observed that insurance based on *Private_Government* alone did not explain that much of *Total Patient Charges.* I ran a multiple linear regression with *Private_Government, BMI Obese n_y_* as independent variables. The multiple linear regression formula changed to y=a+bX1+bX2. Y is equal to our outcome variable of *Total Patient Charges*. A is equal to our constant of 83617.079. bX1 is equal to *Private_Government* of -12567.202. BX2 is equal to *BMI Obese_n_y* of 27135.576.

Total Patient Charges=83617.079+(-12567.202 X 0) + (27135.576 X 0) = 83,617.079 (Private Non-Obese)

Total Patient Charges=83617.079 + (-12567.202 X 0) + (27135.576 X 1) = 110,752.655 (Private Obese)

Total Patient Charges=83617.079 + (-12567.202 X 1) + (27135.576 X 0) = 71,049.877 (Government Non-Obese)

Total Patient Charges=83617.079 + (-12567.202 X 1) + (27135.576 X 1) = 98,185.453 (Government Obese)

R is the strength of the correlation between insurance type, obesity, and patient cost. In this regression, R equals .120. This numerical value shows that insurance type, obesity, and patient cost do not have *that* strong of a relationship relative to a perfect correlation of 1. R squared is the variation that is explained by our independent variables. R squared is reported as .014. Times this number by 100%, insurance and BMI explain 1.4% of the variation. This R squared explains that there are other factors that are influencing *Total Patient Charges* besides these two.

CHAPTER 5: DISCUSSION

There are two different types of cost to consider when speaking of hospital patient total cost. The *before* cost is the monetary investment in insurance coverage while the *after* cost is the tabulation of hospital services. Total patient cost is inclusive of hospital utilization of services and resources used for care for the obese thoracic trauma patient plus the monthly premium (if applicable) to hold insurance. There may be a discrepancy between patients that hold private insurance vs patients that hold government insurance based on the amount paid in premiums. Government insurance patients may be eligible for free or reduced monthly payments.

The Need for Insurance

The first possible reason for needing insurance could lay with the *access to* health care services. Income, location, and other financial ties may place a person in a disadvantage when accessing care.

Secondly, insurance coverage helps cover the costs associated with receiving care. Health services may be expensive depending on the utilization and intensity of care. Although health services may be necessary, the cost associated with receiving care could create a financial burden on the patient.

Lastly, from a patient’s perspective, improvements in their overall health is the big picture goal for utilizing care. Increasing quality of life ensures that time spent day to day provides a level of peace of mind. Utilization of services may create an opportunity for a patient to better their health. Health services may provide knowledge, medication, and/or resources to enhance a person's physiology, longevity, and guidance through various medical complications.

Results

Before writing this manuscript, I wasn't very familiar with health insurance. I had seldom sought out information on the various types of health insurance, the eligibility, or the relationship with obese patients. Throughout writing this manuscript, I read various articles and searched websites that were helpful in determining the key differences in various health insurance.

The analysis I ran were consistent with my hypothesis statement. I was searching for characterization and prediction type answers based on the medical database information. After running my analysis, I was surprised with the results, particularly with the impact of insurance on patient's billed cost.

My hypothesis stated that type of insurance influenced patient billed cost. While this is true, I guessed that insurance would have predicted patient billed cost with more affinity. My linear regression showed that insurance alone only accounted for .03% of the influence on patient cost. This low percentage explained that other factors also influenced patient billed cost. My analysis results are sensible, a lot of compounding factors *could* influence net cost.

Health complications from obesity. It is prominent to evaluate risk and co-morbidities when discussing obesity. High adipose tissue proportional to lean mass places a person in a physiologic imbalance. The imbalance of systematic functioning in the body from high adipose tissue dampens the ability to process basic physiologic tasks. For example, high adipose tissue causes an inflammatory response from the immune system. Enlarged adipocytes are viewed as a threat which causes white blood cell release in order to remain in homeostasis.

Obesity is an important subject to recognize to gain insight to protect the body's basic functioning. Although this may be true on a physiologic level, obesity is also a crucial factor financially. The financial strain as a possible result from a high level of adipose tissue is based on the discussion in the previous paragraph. Our body is an inclusive robust system with various individual hard-working systems. Each individual system is important on a relative and absolute level. Deviations from this robust system causes unfamiliar stress to the body's cells. Homeostatic deviations loud enough to cause chronic damage may need reliance on external care.

Economic and government impact of insurance. As stated above, Medicaid and Medicare are both federally involved insurance programs. Medicare is funded with government protection while Medicaid is established by the government and carried out by the state. These public insurance policies funded by a centralized government entity rely heavily on the economy. Taxpayer contributions from persons employed are the foundational basis for government ran programs.

Another aspect to consider about the economic impact, is the supply of medical professionals and hospital locations and the demand of health care services. While insurance is a national idea, each individual state has the discretion on the implementation of health service availability. As a federalist nation, state governments influence the number of hospitals and the education required to attain a medical degree. The availability of hospitals and medical professionals influence the access to health services.

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APPENDIX A: TABLES

Descriptive

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BMI	828	15.0	56.0	28.326	6.5941
Age_years	1343	15	98	55.48	20.288
Number_of_Fractured_Ribs	1327	1	24	4.00	3.003
Total_Patient_Charges__sept2016	1344	$2,448.00	$1,487,194.31	$89,209.3043	$123,094.58248
Charges_per_LOS_days	1340	$789.41	$60,926.89	$9,343.3011	$5,805.54755
Hospital_Number_Days	1340	1	84	8.67	8.931
Valid N (listwise)	821				

Frequency

Statistics

		Private0__Government1	BMI_obese_n_y	Discharge_Code	ISS_critical_y_n	ICU_y_n	TEA__FINAL_COUNT
N	Valid	1340	828	1119	1344	1344	1344
	Missing	4	516	225	0	0	0

Private0__Government1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non-government Insurance	860	64.0	64.2	64.2
	Government Insurance	480	35.7	35.8	100.0
	Total	1340	99.7	100.0	
Missing	System	4	.3		
Total		1344	100.0		

BMI_obese_n_y

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not obese	520	38.7	62.8	62.8
	Obese	308	22.9	37.2	100.0
	Total	828	61.6	100.0	
Missing	System	516	38.4		
Total		1344	100.0		

Discharge_Code

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Home/Self-Care	575	42.8	51.4	51.4
	1	2	.1	.2	51.6
	Transfer Short-Term General Ho	1	.1	.1	51.7
	Extended Care Facility-SNF	169	12.6	15.1	66.8
	3	1	.1	.1	66.8
	Home Health	64	4.8	5.7	72.6
	6	1	.1	.1	72.7
	Against Medical Advice	1	.1	.1	72.7
	Expired	73	5.4	6.5	79.3
	Transfer to a Federal Hospital	2	.1	.2	79.4
	Disch to Hospice-Medical Fac	8	.6	.7	80.2
	Disc/Trans Medicare App Swing	2	.1	.2	80.3
	Transfer to Another Rehab Facility	172	12.8	15.4	95.7
	Transfer to LTAC	46	3.4	4.1	99.8
	Transfer Psyche Unit/Hospital	2	.1	.2	100.0
	Total	1119	83.3	100.0	
Missing	System	225	16.7		

Total	1344	100.0		

ISS_critical_y_n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a critical ISS	1135	84.4	84.4	84.4
	Critical ISS	209	15.6	15.6	100.0
	Total	1344	100.0	100.0	

ICU_y_n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	675	50.2	50.2	50.2
	1	669	49.8	49.8	100.0
	Total	1344	100.0	100.0	

TEA__FINAL_COUNT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No TEA Used	1096	81.5	81.5	81.5
	TEA Administered	248	18.5	18.5	100.0
	Total	1344	100.0	100.0	

```
T-TEST GROUPS=Sex(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=Age_years BMI Number_of_Fractured_Ribs
Total_Patient_Charges__sept2016
    Charges_per_LOS_days Hospital_Number_Days
  /CRITERIA=CI(.95).
```

Independent samples t-test

Group Statistics

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Age_years	Male	906	52.52	18.739	.623
	Female	437	61.60	21.961	1.051
BMI	Male	550	28.697	6.2950	.2684

	Female	278	27.592	7.1041	.4261
Number_of_Fractured_Ribs	Male	895	4.07	3.065	.102
	Female	432	3.86	2.867	.138
Total_Patient_Charges__sept2016	Male	907	$93,924.4951	$127,953.63077	$4,248.63058
	Female	437	$79,422.8556	$111,847.87431	$5,350.40942
Charges_per_LOS_days	Male	904	$9,450.7776	$5,564.55909	$185.07448
	Female	436	$9,120.4597	$6,276.62983	$300.59605
Hospital_Number_Days	Male	904	8.98	9.409	.313
	Female	436	8.03	7.819	.374

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Age_years	Equal variances assumed	28.239	.000	-7.854	1341	.000	-9.078	1.156	-11.345	-6.810
	Equal variances not assumed			-7.434	751.340	.000	-9.078	1.221	-11.475	-6.680
BMI	Equal variances assumed	5.446	.020	2.282	826	.023	1.1045	.4840	.1544	2.0545

	Equal variances not assumed			2.193	500.708	.029	1.1045	.5036	.1151	2.0938
Number_of_Fractured_Ribs	Equal variances assumed	1.401	.237	1.190	1325	.234	.209	.176	-.136	.554
	Equal variances not assumed			1.218	905.075	.223	.209	.172	-.128	.547
Total_Patient_Charges__sept2016	Equal variances assumed	11.361	.001	2.025	1342	.043	$14,501.63955	$7,159.67245	$456.27194	$28,547.00717
	Equal variances not assumed			2.123	973.021	.034	$14,501.63955	$6,832.11115	$1,094.27037	$27,909.00874
Charges_per_LOS_days	Equal variances assumed	2.154	.142	.976	1338	.329	$330.31790	$338.51341	-$333.75692	$994.39272
	Equal variances not assumed			.936	773.744	.350	$330.31790	$353.00220	-$362.63765	$1,023.27345

Hospital_Number_Days	Equal variances assumed	16.068	.000	1.820	1338	.069	.947	.520	-.074	1.968
	Equal variances not assumed			1.940	1015.974	.053	.947	.488	-.011	1.905

```
CROSSTABS
  /TABLES=Private0__Government1 BMI_obese_n_y Discharge_Code ISS_critical_y_n
TEA__FINAL_COUNT
    ICU_y_n BY Sex
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Private0__Government1 * Sex	1340	99.7%	4	0.3%	1344	100.0%
BMI_obese_n_y * Sex	828	61.6%	516	38.4%	1344	100.0%
Discharge_Code * Sex	1119	83.3%	225	16.7%	1344	100.0%
ISS_critical_y_n * Sex	1344	100.0%	0	0.0%	1344	100.0%
TEA__FINAL_COUNT * Sex	1344	100.0%	0	0.0%	1344	100.0%
ICU_y_n * Sex	1344	100.0%	0	0.0%	1344	100.0%

Private0__Government1 * Sex

Crosstab

			Sex		Total
			Male	Female	
Private0__Government1	Non-government Insurance	Count	640	220	860
		% within Sex	70.8%	50.5%	64.2%
	Government Insurance	Count	264	216	480
		% within Sex	29.2%	49.5%	35.8%
Total		Count	904	436	1340
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	52.921[a]	1	.000		
Continuity Correction[b]	52.040	1	.000		
Likelihood Ratio	52.026	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	52.881	1	.000		
N of Valid Cases	1340				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 156.18.

b. Computed only for a 2x2 table

BMI_obese_n_y * Sex

Crosstab

			Sex		Total
			Male	Female	
BMI_obese_n_y	Not obese	Count	334	186	520
		% within Sex	60.7%	66.9%	62.8%
	Obese	Count	216	92	308
		% within Sex	39.3%	33.1%	37.2%
Total		Count	550	278	828
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.018[a]	1	.082		

Continuity Correction[b]	2.759	1	.097		
Likelihood Ratio	3.044	1	.081		
Fisher's Exact Test				.094	.048
Linear-by-Linear Association	3.015	1	.083		
N of Valid Cases	828				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 103.41.

b. Computed only for a 2x2 table

Discharge_Code * Sex

Crosstab

			Sex		
			Male	Female	Total
Discharge_Code	Home/Self-Care	Count	416	159	575
		% within Sex	55.9%	42.4%	51.4%
	1	Count	0	2	2
		% within Sex	0.0%	0.5%	0.2%
	Transfer Short-Term General Ho	Count	1	0	1
		% within Sex	0.1%	0.0%	0.1%
	Extended Care Facility-SNF	Count	76	93	169
		% within Sex	10.2%	24.8%	15.1%
	3	Count	1	0	1
		% within Sex	0.1%	0.0%	0.1%
	Home Health	Count	42	22	64
		% within Sex	5.6%	5.9%	5.7%
	6	Count	0	1	1
		% within Sex	0.0%	0.3%	0.1%
	Against Medical Advice	Count	1	0	1
		% within Sex	0.1%	0.0%	0.1%
	Expired	Count	53	20	73
		% within Sex	7.1%	5.3%	6.5%
	Transfer to a Federal Hospital	Count	2	0	2
		% within Sex	0.3%	0.0%	0.2%
	Disch to Hospice-Medical Fac	Count	5	3	8
		% within Sex	0.7%	0.8%	0.7%
	Disc/Trans Medicare App Swing	Count	1	1	2
		% within Sex	0.1%	0.3%	0.2%
		Count	109	63	172

	Transfer to Another Rehab Facility	% within Sex	14.7%	16.8%	15.4%
	Transfer to LTAC	Count	35	11	46
		% within Sex	4.7%	2.9%	4.1%
	Transfer Psyche Unit/Hospital	Count	2	0	2
		% within Sex	0.3%	0.0%	0.2%
Total		Count	744	375	1119
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	57.659[a]	14	.000
Likelihood Ratio	58.573	14	.000
Linear-by-Linear Association	.001	1	.982
N of Valid Cases	1119		

a. 17 cells (56.7%) have expected count less than 5. The minimum expected count is .34.

ISS_critical_y_n * Sex

Crosstab

			Sex		
			Male	Female	Total
ISS_critical_y_n	Not a critical ISS	Count	759	376	1135
		% within Sex	83.7%	86.0%	84.4%
	Critical ISS	Count	148	61	209
		% within Sex	16.3%	14.0%	15.6%
Total		Count	907	437	1344
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.249[a]	1	.264		
Continuity Correction[b]	1.076	1	.300		

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Likelihood Ratio	1.269	1	.260		
Fisher's Exact Test				.296	.150
Linear-by-Linear Association	1.248	1	.264		
N of Valid Cases	1344				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 67.96.

b. Computed only for a 2x2 table

TEA__FINAL_COUNT * Sex

Crosstab

			Sex		Total
			Male	Female	
TEA__FINAL_COUNT	No TEA Used	Count	737	359	1096
		% within Sex	81.3%	82.2%	81.5%
	TEA Administered	Count	170	78	248
		% within Sex	18.7%	17.8%	18.5%
Total		Count	907	437	1344
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.157[a]	1	.692		
Continuity Correction[b]	.103	1	.748		
Likelihood Ratio	.157	1	.692		
Fisher's Exact Test				.708	.376
Linear-by-Linear Association	.157	1	.692		
N of Valid Cases	1344				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 80.64.

b. Computed only for a 2x2 table

ICU_y_n * Sex

Crosstab

			Sex		Total
			Male	Female	
ICU_y_n	0	Count	426	249	675

		% within Sex	47.0%	57.0%	50.2%
	1	Count	481	188	669
		% within Sex	53.0%	43.0%	49.8%
Total		Count	907	437	1344
		% within Sex	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.823[a]	1	.001		
Continuity Correction[b]	11.426	1	.001		
Likelihood Ratio	11.853	1	.001		
Fisher's Exact Test				.001	.000
Linear-by-Linear Association	11.815	1	.001		
N of Valid Cases	1344				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 217.52.

b. Computed only for a 2x2 table

```
CORRELATIONS
  /VARIABLES=Sex BMI Private0__Government1 BMI_obese_n_y Age_years
Discharge_Code
    Number_of_Fractured_Ribs ISS_critical_y_n TEA__FINAL_COUNT
Total_Patient_Charges__sept2016
    Charges_per_LOS_days Hospital_Number_Days ICU_y_n
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Private0__Government1[b]	.	Enter

a. Dependent Variable: Total_Patient_Charges__sept2016

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.056[a]	.003	.002	$122,949.75105

a. Predictors: (Constant), Private0__Government1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	94325.049	4192.552		22.498	.000	86100.359	102549.740
	Private0__Government1	-14281.455	7005.033	-.056	-2.039	.042	-28023.499	-539.411

a. Dependent Variable: Total_Patient_Charges__sept2016

```
REGRESSION
  /MISSING PAIRWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Total_Patient_Charges__sept2016
  /METHOD=ENTER Private0__Government1 BMI_obese_n_y.
```

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	BMI_obese_n_y, Private0__Government1[b]	.	Enter

a. Dependent Variable: Total_Patient_Charges__sept2016

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.120[a]	.014	.012	$122,352.51577

a. Predictors: (Constant), BMI_obese_n_y, Private0__Government1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	83617.079	6357.759		13.152	.000	71137.724	96096.433
	Private0__Government1	-12567.202	8903.818	-.049	-1.411	.158	-30044.097	4909.694
	BMI_obese_n_y	27135.576	8830.683	.107	3.073	.002	9802.233	44468.919

a. Dependent Variable: Total_Patient_Charges__sept2016

```
REGRESSION
  /MISSING PAIRWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Total_Patient_Charges__sept2016
  /METHOD=ENTER Private0__Government1 BMI_obese_n_y Sex.
```