

```

setwd('C:/Users/Admin/Desktop')

getwd()

df <- read_excel("Healthcare Data.xlsx")

View(df)

str(df)

summary(df)

# To record the patient statistics, the agency wants to find the age category of
people who frequent the hospital and has the maximum expenditure

head(df)

summary(df)

head(df$AGE)

summary(df$AGE)

table(df$AGE)

hist(df$AGE)

summary(as.factor(df$AGE))

max(table(df$AGE))

max(summary(as.factor(df$AGE)))

which.max(table(df$AGE))

age <- aggregate(TOTCHG ~ AGE, data = df, sum)

max(age)

#In order of severity of the diagnosis and treatments and to find out the
expensive treatments, the agency wants to find the diagnosis related group that
has maximum hospitalization and expenditure.

t <- table(df$APRDRG)

d <- as.data.frame(t)

names(d)[1] = 'Diagnosis Group'

d

which.max(table(df$APRDRG))

which.max(t)

```

#To make sure that there is no malpractice, the agency needs to analyze if the race of the patient is related to the hospitalization costs

```
table(df$RACE)
```

```
df$RACE <- as.factor(df$RACE)
```

```
fit <- lm(TOTCHG ~ RACE,data=df)
```

```
fit
```

```
summary(fit)
```

```
fit1 <- aov(TOTCHG ~ RACE,data=df)
```

```
summary(fit1)
```

```
df <- na.omit(df)
```

#To properly utilize the costs, the agency has to analyze the severity of the hospital costs by age and gender for proper allocation of resources.

```
table(df$FEMALE)
```

```
a <- aov(TOTCHG ~ AGE+FEMALE,data=df)
```

```
summary(a)
```

```
b <- lm(TOTCHG ~ AGE+FEMALE,data=df)
```

```
summary(b)
```

#Since the length of stay is the crucial factor for inpatients, the agency wants to find if the length of stay can be predicted from age, gender, and race.

```
table(df$LOS)
```

```
cat <- aov(LOS ~ AGE+FEMALE+RACE,data=df)
```

```
summary(cat)
```

```
cat <- lm(LOS ~ AGE+FEMALE+RACE,data=df)
```

```
summary(cat)
```

#To perform a complete analysis, the agency wants to find the variable that mainly affects the hospital costs.

```
aov(TOTCHG ~.,data=df)
```

```
mod <- lm(TOTCHG ~ .,data=df)
```

```
summary(mod)
```