

**CPH 682-001: Quantitative Methods**  
**Team Project #6**

**Fall 2017**  
**Dr. Charnigo**

This project covers Chapters 9 and 11. The workbook accompanying this team project contains a fictional data set on how much time a physician spent with a patient, whether the patient was new (0=no, 1=yes), and the patient's age. Please record your answers in an Excel file called {WB6CPH682F17 LN1 LN2 LN3 LN4.xlsx} and upload the final version into Canvas. Above, LN1 is your last name, while LN2 through LN4 are the last names of your other group members. (Groups with only three persons will have only three last names, obviously.) Members of the same group will have identical files except for the order of the last names in the filename. Members of different groups should have different files.

1. Use FTEST to test the null hypothesis that (population) variance in new patients' times equals (population) variance in returning patients' times.
2. Use TTEST to test the null hypothesis that new patients' (population) average time equals returning patients' (population) average time.
3. Use SKEW to decide whether the new patients' times are close enough to normally distributed for you to be comfortable with the previous findings. Repeat for returning patients.
4. Make a scatter plot of time against age. Describe what you see.
5. Use Excel to fit a regression model, where time is a linear function of age plus random variation. What are the estimated intercept and slope of the line? What is the estimated standard deviation of the random variation?
6. What percentage of variation in time is explained by age in this data set?
7. Is there a significant association between time and age in this data set? Explain.
8. Plot the residuals from the regression model against age. Describe what you see.