Lab Assignment 7

STA 100 | A. Farris | Spring 2020

A pdf copy of your assignment is due at the end of the day (11:59pm PT) Monday, June 1. Submission of the pdf will be through Canvas. Please put in the effort to make it look reasonably professional – you're encouraged to use R Markdown. You are free to work in groups, but you must submit your own writeup, and run your own code.

Memo

perform an ANOVA (use the p-value for the F test of equality of means)
and post-hoc analysis of multiple comparisons (use Tukey's procedure)

FROM: Maria McYourNewBoss

TO: New hire

SUBJECT: Ventilation analysis

DATE: May 26, 2020

Congratulations on your new position in the McYourNewBoss Lab! I hope you've had a chance to get settled and to meet your new labmates. Before you get started with some other projects, I'm going to need you to wrap one up that had already been started. The data for this one has already been collected, so this should be easy.

The goal of this project is to investigate how three methods of ventilation during anesthesia affect post-op blood folate levels. The three methods are

- 50% nitrous oxide and 50% oxygen, continuously for 24 hours;
- 50% nitrous oxide and 50% oxygen, only during the operation; and
- no nitrous oxide but 35%–50% oxygen continuously for 24 hours.

You can find data on blood folate levels (in μg) for patients treated with these methods here.

I'm concerned about limiting the risk of anemias that are associated with lower blood folate levels in patients, so you need to identify for me whether there is evidence for any of these methods being better or worse than others in this sense.

Remember that, like many similarly distinguished people in my field, I rely on students or employees to do my data analysis for me. So, it is helpful to me for you to explain what you are doing that I may follow along. However, also like many distinguished employers in this field, I have a strong and somewhat mercurial sense of how valuable my time is; so you need to do so in as easy-to-read and succinct a way as you can.