Northwestern | Kellogg
School of Management

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"Elective Surgery Schedule" Assignment

Read the case "Elective Surgery Schedule" and note the accompanying data.

The surgical operations leadership team has asked you to compose a Data Brief to help them better understand and use predictive modeling for surgery planning. This email request just came from the head of surgical operations:

"Thanks for meeting today. As discussed, please provide a briefing document that addresses the following. Please make sure to be comprehensive, but concise.

1. Provide some reasons as to why predictive modeling can be helpful here. We may need to justify the use of resources on an analytics-oriented solution, so please think broadly about ways that prediction can be helpful.

2. Using the data, explain:
   a. Whether and how the number of scheduled cases is predictive of actual final case volume
   b. Whether the predictive power of scheduled cases changes as the surgery date nears (e.g., whether T-28 is differently predictive than, say, T-5)
   c. How, if at all, total surgical volume differs by day of week

3. Show us the output of a predictive model that you think will be most helpful for us to accomplish any of the goals you mentioned in point 1. Also briefly describe what kind of model you are using and any important elements of the model that you think we need to know.

4. Please mock up a sample dashboard / graphic that we could update and use on a daily basis that you think would help us. Consider what information you think the team would want to see regarding upcoming predicted volume. Don't worry if you have the right data available for this example – you can use what you have or just make up data points to fill in the dashboard / graphic.

Thanks again!"