In Reply We appreciate Dexter and Epstein for their interest in our article. Prior to developing the randomized clinical trial,1 we explored different modeling approaches and data inputs. We selected the random forest model because it provided the best results on a testing set.

We investigated the claim that a simple 2-parameter linear regression model would achieve the same outcome vis-à-vis reduced patient wait time. The proposed approach is applied on the training set used to derive the parameters; ideally, it would have been validated on a testing set that the model has not been trained on. It is not possible to estimate the direct effect on outcome metrics such as patient wait time, surgeon wait time, and use of preoperative surgical resources, which would require an actual implementation. Below are the questions posed by Dexter and Epstein, along with our corresponding answers.

1. For the control group, what intercept and slope minimizes the mean absolute error?
   A. Intercept, 19.660; slope, 1.075

2. What is the performance of such an adjustment compared with the machine learning approach?
   A. Mean absolute error, 58.2 minutes (1.1-minute improvement of control group)

3. If the authors instead simply add 30 minutes to every estimate, what is the resulting mean absolute error?
   A. Mean absolute error, 58.6 minutes (0.7-minute improvement of control group)

We found no significant improvement using the 2-parameter regression or adding 30 minutes to the existing process on the main outcome metric. The mean error was shifted close to 0 (similar to the study), addressing bias in the current process. While this may indicate a supposed reduction in patient wait time, since there was no significant reduction in the mean absolute error, it would likely come at the cost of an increase in surgeon wait time, whereas the machine learning model showed a slight improvement in surgeon wait time. The 2-parameter model merely shifts the error distribution closer to 0 without narrowing it. We see no indication that it would provide the same results as ours.

In the original study, cases scheduled the day before or day of surgery were excluded because of the manual implementation method.1 We agree that the goal should be to make predictions available for every operating room case. Our ongoing effort is to make predictions available in real time, which should address the exclusion issue. This appears to be achievable.

While a simple approach may be beneficial if it facilitates a seamless implementation, we believe we should demand more in an age when vast amounts of data are accessible in real time and machine learning is evolving exponentially. We continue to trim and refine our model. However, rather than limiting ourselves to marginal improvements, we are also adding and exploring new modeling approaches and relevant data fields.

Any model (simple or complex) that significantly increases accuracy may also reduce patient wait time, surgeon wait time, and use of presurgical resources. These are worthwhile goals. The magnitude of improvements will depend on the performance, reliability, and implementation of the model.

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CORRECTION

Omission of Funding Information in Article Information: In the Original Investigation titled “Patient-Centered Decision-making for Postoperative Narcotic-Free Endocrine Surgery: A Randomized Clinical Trial,” published online September 8, 2021, there was a Funding/Support and Role of the Funder/Sponsor omission in the Article Information. The Article Information should have indicated that Dr Schumm was supported by a grant from the H&H Lee Research Program and that the H&H Lee Research Program played no role in the publication process.