We will discuss the results of the classification tree model.

So we first observe that the overall accuracy of the method regarding the percentage that it accurately predicts is 80%, compared to 75% of the baseline.

But notice that this is done in an interesting way.

For bucket one patients, the two models are equivalent.

But of course this suggests the idea that healthy people stay healthy, which is the idea of the baseline model.

The cost repeats is valid in the data.

But then for buckets two to five, notice that the accuracy increases substantially from 31% to 60%-- it doubles-- from 21% to 53%-- more than doubles-- and from 19% to 39%-- doubles.

There's an improvement from 23% to 30%, not as big as before, but there is indeed an improvement for bucket five.

But notice the improvement on the penalty from 0.56 to 0.52 overall.

A small improvement in bucket one, but a significant improvement as we increase on the buckets.

For example, here for bucket five, the penalty error decreases from 1.88 to 1.01, a substantial improvement.

So we observed that there's a substantial improvement over the baseline, especially as we go down on buckets.

It doubles the accuracy over the baseline in some cases.

And so we have seen there's a smaller accuracy improvement in bucket five, but there's a much lower penalty in the prediction for bucket five.

So what is the edge of the analytics provided to D2Hawkeye?

First and foremost, there was a substantial improvement in the company's ability to identify patients who need more attention.

Another advantage was related to the fact that the model was in fact interpretable by physicians.

So the physicians were able to improve the model by identifying new variables and refining existing variables.

That really led to further improvements.

Finally, and quite importantly, the analytics gave the company an edge over the competition using-- that the competition used last century methods.

And the use of machine learning methods-- in this case, classification trees-- provided an edge that also helped Hawkeye when it was sold to Verisk Analytics in 2009.