**Key points**

* + Overall accuracy can sometimes be a deceptive measure because of unbalanced classes.
  + A general improvement to using overall accuracy is to study sensitivity and specificity separately. **Sensitivity**, also known as the true positive rate or recall, is the proportion of actual positive outcomes correctly identified as such. **Specificity**, also known as the true negative rate, is the proportion of actual negative outcomes that are correctly identified as such.
  + A confusion matrix tabulates each combination of prediction and actual value. You can create a confusion matrix in R using the table() function or the confusionMatrix() function from the **caret** package.

**Code**

# tabulate each combination of prediction and actual value

table(predicted = y\_hat, actual = test\_set$sex)

test\_set %>%

mutate(y\_hat = y\_hat) %>%

group\_by(sex) %>%

summarize(accuracy = mean(y\_hat == sex))

prev <- mean(y == "Male")

confusionMatrix(data = y\_hat, reference = test\_set$sex)