Chapter 2

Additional Notes:

Logrank vs Wilcoxon Tests

Logrank vs Wilcoxon tests

□ From Martinez & Naranjo (2010):

  ◻ "In general, the logrank test tends to be sensitive to distributional differences which are most evident late in time."

  ◻ "In comparison, the Wilcoxon test tends to be more powerful in detecting differences early in time."

Logrank vs Wilcoxon tests

□ From Martinez & Naranjo (2010):

  ◘ "… when the hazard ratio is nonconstant the generalized Wilcoxon test can be more powerful than the logrank test".

  ◘ "In applications, the logrank test is often used after checking for validity of the proportional hazards (PH) assumption, with Wilcoxon being the fallback method when the PH assumption fails".

Logrank vs Wilcoxon tests

> "the hazard ratio is nonconstant"
> "the proportional hazards (PH) assumption fails".

- We will go over the proportional hazards assumption and the hazard ratio in Chapter 3.
  - For now, what you need to know is that crossing survival curves is an indication that the PH assumption does not hold.

Logrank vs Wilcoxon tests

□ So you might want to use the Wilcoxon test if you have crossing survival curves. However, Martinez & Naranjo note that "the relative performance of the two procedures depend not just on the PH assumption but also on the pattern of differences between the two survival curves".

◻ By "pattern of differences", they mean whether differences in the curves occur early or late in the follow-up period.

◻ Guidance on choosing between the two methods is provided in their paper.