

# APTS - Survival Analysis

## Lab Session 2

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Consider the data on the times until staphylococcus infection of burn patients considered in Lab 1.

1. Test the hypothesis that the distribution of the times to staphylococcus infection are the same in the two disinfectant groups, supposing that a Cox model fits the data well. Compare your results with those of Lab 1.
2. Included in the data set is a covariate that measures the total surface area burned. Test the hypothesis that the distributions of the times to staphylococcus infection are the same in the two disinfectant groups, adjusting for the total area burned and supposing again that the Cox model is valid. Use the Wald and the likelihood ratio test. Compare your results with those of question 1.
3. Using the latter Cox model, plot the survival function for an individual who has 25% of the total body area burned for the two bathing solutions.
4. Find 95% confidence intervals for the survival functions for the two bathing solutions at 20 days for a patient with 25% of total surface area of body burned.

Hint : Use 'coxph' in R.