Logrank Tests

Numeric Results for the Logrank Test in Terms of Sample Size ————————————————————
Alternative Hypothesis: Two-Sided
$T0 = 60$

Power	N1	N2	N	Haz Ratio (HR)	Ctrl Prop Surv (S1)	Trt Prop Surv (S2)	Acc- rual Pat'n	Acc- rual Time/ Total Time	Ctrl Loss	Trt Loss	Ctrl to Trt	Trt to Ctrl	Alpha	Beta
0.90017	442	50	492	2.6921	0.55	0.2	Equal	84 / 120	0.05	0.05	0	0	0.05	0.09983

References
Lakatos, Edward. 1988. 'Sample Sizes Based on the Log-Rank Statistic in Complex Clinical Trials', Biometrics,
    Volume 44, March, pages 229-241.
Lakatos, Edward. 2002. 'Designing Complex Group Sequential Survival Trials', Statistics in Medicine, Volume 21,
    pages 1969-1989.

Report Definitions
Power is the probability of rejecting a false null hypothesis. Power should be close to one.
N1|N2|N are the sample sizes of the control group, treatment group, and both groups, respectively.
Hazard Ratio (HR) is the treatment group's hazard rate divided by the control group's hazard rate.
Proportion Surviving is the proportion surviving past time T0.
Accrual Time is the number of time periods (years or months) during which accrual takes place.
Total Time is the total number of time periods in the study. Follow-up time = (Total Time) - (Accrual Time).
Ctrl Loss is the proportion of the control group that is lost (drop out) during a single time period (year or month).
Trt Loss is the proportion of the treatment group that is lost (drop out) during a single time period (year or month).
Ctrl to Trt (drop in) is the proportion of the control group that switch to a group with a hazard rate equal to the
    treatment group.
Trt to Ctrl (noncompliance) is the proportion of the treatment group that switch to a group with a hazard rate equal
    to the control group.
Alpha is the probability of rejecting a true null hypothesis. It should be small.
Beta is the probability of accepting a false null hypothesis. It should be small.

Numeric Results for the Logrank Test in Terms of Events ————————————————————
Alternative Hypothesis: Two-Sided
$T0 = 60$

Power	Ctrl Evts (E1)	Trt Evts (E2)	Total Evts (E)	Haz Ratio (HR)	Ctrl Prop Surv (S1)	Trt Prop Surv (S2)	Acc- rual Pat'n	Acc- rual Time/ Total Time	Ctrl Loss	Trt Loss	Ctrl to Trt	Trt to Ctrl	Alpha	Beta
0.90017	70.5	16.7	87.2	2.6921	0.55	0.2	Equal	84 / 120	0.05	0.05	0	0	0.05	0.09983

Summary Statements ——
A two-sided logrank test with an overall sample size of 492 subjects (442 in the control group and 50 in the
treatment group) achieves 90% power at a 0.05 significance level to detect a hazard ratio of 2.6921 when the
proportion surviving in the control group is 0.55. The study lasts for 120 time periods of which subject accrual
(entry) occurs in the first 84 time periods. The accrual pattern across time periods is uniform (all periods equal).
The proportion dropping out of the control group is 0.05. The proportion dropping out of the treatment group is
0.05. The proportion switching from the control group to another group with a survival proportion equal to that of
the treatment group is 0. The proportion switching from the treatment group to another group with a survival
proportion equal to that of the control group is 0.

Logrank Tests

Procedure Input Settings ——

Autosaved Template File
\\Mac\Home\Documents\PASS 2021\Procedure Templates\Autosave\Logrank Tests - Autosaved 2023_6_15-11_54_43.t396

Design Tab
Solve For:	Sample Size
Alternative Hypothesis:	Two-Sided
Power:	0.9
Alpha:	0.05
Group Allocation:	Enter percentage in Group 1, solve for N1 and N2
Percent in Group 1:	90
Input Type:	Proportion Surviving
S1 (Proportion Surviving - Control):	0.55
Treatment Group Parameter:	S2 (Proportion Surviving - Treatment)
S2 (Proportion Surviving - Treatment):	0.2
T0 (Survival Time):	60
Accrual Time (Integers Only):	84
Accrual Pattern:	Uniform or Equal
Total Time (Integers Only):	120
Controls Lost:	0.05
Treatments Lost:	0.05
Controls Switch to Treatments:	0.0
Treatments Switch to Controls:	0.0

Options Tab
Number of Intervals within a Time Period:	2000