

I want to...	PARAMETRIC	SEMI-PARAMETRIC	NON-PARAMETRIC
Estimate a survival function	Parametric survival model (MLE)		Kaplan-Meier estimator
Estimate a cumulative hazard function	Parametric survival model (MLE)		Nelson-Aalen estimator
Estimate a hazard function	Parametric survival model (MLE)		Nelson-Aalen estimator + kernel density estimation
Test for differences in survival between groups	Parametric survival model (MLE) + Wald/score/LR test		Logrank test
Test for differences in survival between groups w/ confounding	PH w/ baseline hazard + HR parameters (MLE + Wald, Score, LR)		Stratified Logrank test
Estimate a hazard ratio	PH w/ baseline hazard + HR parameter (MLE)	Cox PH model (incl. time-varying covariates)	
Estimate a hazard ratio w/ confounding	PH w/ baseline hazard + HR parameters (MLE)	Cox PH model OR stratified Cox (incl. time-varying covariates)	
Estimate an acceleration factor for time scale	AFT model (MLE)		
Estimate an acceleration factor for time scale	AFT model (MLE)		

MLE: Maximum Likelihood Estimation

PH: Proportional Hazards

AFT: Accelerated Failure Time

HR: Hazard Ratio

LR: Likelihood Ratio