CS7

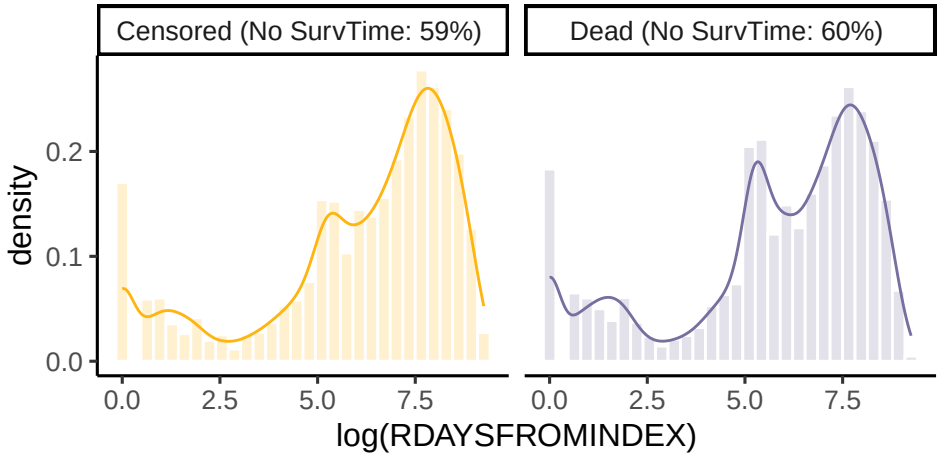
2023-04-10

```
### EDA
load("DataCleaned.RData")
```

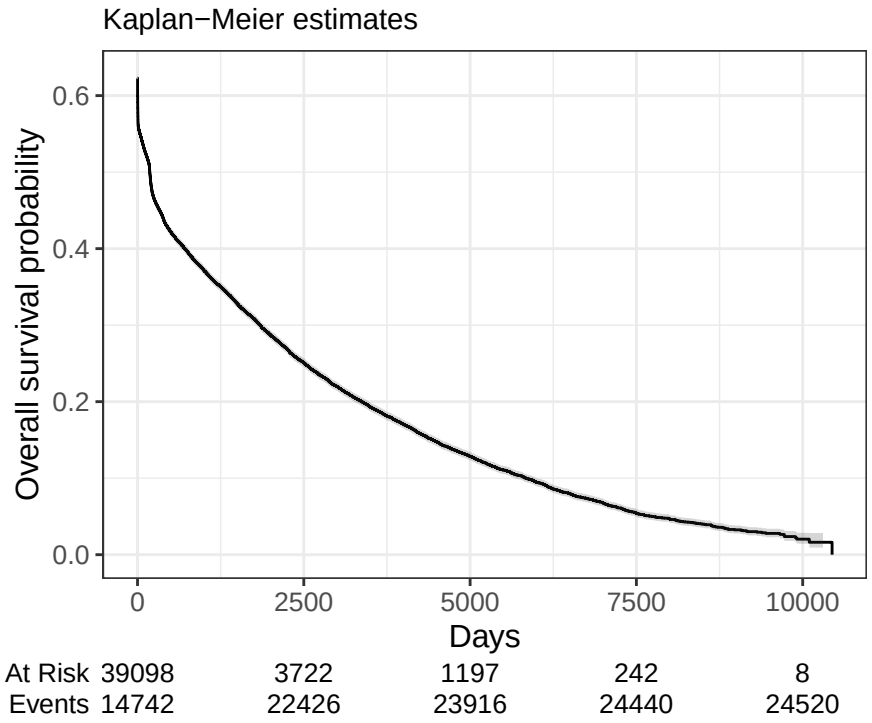
```
data.subject <- data.impute %>% group_by(RSUBJID) %>% filter(row_number() == n()) %>%
  mutate(DEATH2 = ifelse(DEATH == 0, "Censored", "Dead")) %>%
  ungroup()

df.InstantDeath <- data.subject %>% group_by(DEATH2) %>%
  summarise(InstantDeath = mean(RDAYSFROMINDEX == 0)) %>%
  mutate(InstantDeath = str_c(round(InstantDeath*100, 0), "%"))
```

```
# Distribution of log-RDAYSFROMINDEX in the two groups
inner_join(data.subject, df.InstantDeath) %>%
  mutate(DEATH2 = str_c(DEATH2, " (No SurvTime: ", InstantDeath, ") ")) %>%
  ggplot() +
  geom_histogram(aes(log(RDAYSFROMINDEX), ..density.., fill = DEATH2),
                 color = "white", alpha = 0.2) +
  geom_density(aes(log(RDAYSFROMINDEX), color = DEATH2)) +
  scale_fill_manual(values = pal(2)) +
  scale_color_manual(values = pal(2)) +
  facet_wrap(~DEATH2) +
  theme(legend.position = "none")
```




```
# Kaplan-Meier plots
survfit2(Surv(RDAYSFROMINDEX, DEATH) ~ 1, data = data.subject) %>%
  ggsurvfit() +
  add_confidence_interval() +
  add_risktable() +
  labs(x = "Days", y = "Overall survival probability",
       subtitle = "Kaplan-Meier estimates")
```




```
# Cox regression model
surv_obj <- Surv(time = data.subject$RDAYSFROMINDEX+0.1, event = data.subject$DEATH,
                 type = "right")
model.cox <- coxph(surv_obj ~ .-RDAYSFROMINDEX-RSEQCATHNUM-RSUBJID-DEATH-DEATH2,
                   data = data.subject)
model.cox %>%
  tbl_regression(exp = TRUE)
```

Characteristic	HR	95% CI	p-value
AGE_G	1.01	1.01, 1.01	<0.001
GENDER			
0	—	—	
1	1.07	1.03, 1.12	<0.001
RACE_G			
1	—	—	
2	0.94	0.91, 0.98	0.002
3	0.88	0.82, 0.94	<0.001
ACS			
0	—	—	
1	1.37	1.31, 1.43	<0.001
2	1.00	0.95, 1.05	>0.9
3	1.67	1.56, 1.80	<0.001
4	1.09	1.05, 1.12	<0.001
CHFSEV	1.07	1.06, 1.09	<0.001
DPCABG			
0	—	—	
1	0.27	0.26, 0.29	<0.001
2	0.88	0.84, 0.92	<0.001
DPMI			
0	—	—	
1	0.63	0.60, 0.67	<0.001

Characteristic	HR	95% CI	p-value
2	1.08	1.04, 1.13	<0.001
DPPCI			
0	—	—	
1	0.38	0.36, 0.39	<0.001
2	0.85	0.78, 0.91	<0.001
HXANGINA			
0	—	—	
1	0.77	0.74, 0.80	<0.001
HXCEREB			
0	—	—	
1	1.09	1.05, 1.13	<0.001
HXCHF			
0	—	—	
1	0.74	0.71, 0.78	<0.001
HXCOPD			
0	—	—	
1	1.16	1.11, 1.21	<0.001
HXDIAB			
0	—	—	
1	1.13	1.10, 1.16	<0.001
HXHTN			
0	—	—	
1	0.95	0.93, 0.98	0.002
HXHYL			
0	—	—	
1	0.68	0.66, 0.70	<0.001
HXMI			
0	—	—	
1			
HXSMOKE			
0	—	—	
1	1.02	0.99, 1.05	0.2
NUMPRMI	0.95	0.93, 0.97	<0.001
DIASBP_R	0.99	0.99, 0.99	<0.001
PULSE_R	1.00	1.00, 1.00	<0.001
SYSBP_R	1.00	1.00, 1.00	0.3
CBRUITS			
0	—	—	
1	1.13	1.09, 1.17	<0.001
HEIGHT_R	1.00	1.00, 1.00	0.8
S3			
0	—	—	
1	1.17	1.10, 1.23	<0.001
WEIGHT_R	1.0	0.99, 1.00	<0.001
CREATININE_R	1.01	1.01, 1.02	<0.001
CATHAPPR			
0	—	—	
1	0.51	0.44, 0.60	<0.001
2	0.99	0.89, 1.09	0.8
3	0.91	0.82, 1.01	0.070
DIAGCATH			
0	—	—	

Characteristic	**HR**	**95% CI**	**p-value**
1	1.14	1.04, 1.24	0.003
INTVCATH			
0	—	—	
1	0.61	0.55, 0.67	<0.001
CORDOM			
1	—	—	
2	0.87	0.82, 0.92	<0.001
3	0.95	0.87, 1.03	0.2
LADST	1.00	1.00, 1.00	<0.001
LCXST	1.00	1.00, 1.00	<0.001
LMST	1.00	1.00, 1.00	<0.001
LVEF_R	0.99	0.99, 0.99	<0.001
NUMDZV	0.86	0.83, 0.88	<0.001
PRXLADST	1.00	1.00, 1.00	0.067
RCAST	1.00	1.00, 1.00	<0.001
DAYS2LKA	1.00	1.00, 1.00	<0.001
DSCABG	1.24	1.20, 1.28	<0.001
DSMI	1.22	1.15, 1.30	<0.001
DSPCI	1.19	1.08, 1.32	<0.001
DSSTROKE	1.16	1.11, 1.21	<0.001