

## Practical 4

### Explore time to cessation of symptoms in subjects with confirmed influenza virus infection

A study was conducted in 2007 to investigate household transmission of influenza virus (Cowling et al., 2008, PLoS ONE). An extract of the data regarding duration of illness in index cases may be loaded via

```
flu <- read.csv("http://web.hku.hk/~ehylau/pilot2007.csv")
```

The description of the variables is as follows:

- *hhID* is a subject identifier.
- *male* indicates male sex
- *onsettime* is the delay between symptom onset and recruitment to the study (not used here).
- *vac1* = 1 indicates receipt of vaccine prior to the flu season
- *flu.type* indicates the virus type
- *antibiotics*, *antiviral*, *antihistamine*, *antipyretic*, *steroid* indicate treatments prescribed
- Individuals with chronic diseases were recorded with *chor\_disease*=1,
- *time*, *event* is the outcome – time to cessation of symptoms (*event*=1) or censoring (*event*=0)
- *age* is in years
- *timeL*, *timeR* are the interval-censored times to cessation of viral shedding

Perform the following analyses:

- (a) Plot the K-M estimate of the time to cessation of symptoms
- (b) Plot the K-M estimate by age group (divide into younger children 0-6, older children 7-15 and adults aged 16+)
- (c) Plot the K-M estimate by flu type.