bcmort package:ISwR R Documentation

Breast cancer mortality

Danish study on the effect of screening for breast cancer.

Format:

A data frame with 24 observations on 4 variables.

'age' a factor with levels '50-54', '55-59', '60-64', '65-69', '70-74', and '75-79'

'cohort' a factor with levels 'Study gr.', 'Nat.ctr.', 'Hist.ctr.', and 'Hist.nat.ctr.'.

'bc.deaths' numeric, number of breast cancer deaths.

'p.yr' a numeric vector, person-years under study.

Details:

Four cohorts were collected. The "study group" consists of the population of women in the appropriate age range in Copenhagen and Frederiksberg after the introduction of routine mammography screening. The "national control group" consisted of the population in the parts of Denmark in which routine mammography screening was not available. These two groups were both collected in the years 1991-2001. The "historical control group" and the "historical national control group" are similar cohorts from 10 years earlier (1981-1991), before the introduction of screening in Copenhagen and Frederiksberg. The study group comprises the entire population, not just those accepting the invitation to be screened.

A.H. Olsen et al. (2005), Breast cancer mortality in Copenhagen after introduction of mammography screening. British Medical Journal, 330: 220-222.

Exercise

- In the bcmort data set, the four-level factor cohort can be considered the product of two two-level factors, say "period" (1981–1991 or 1991–2001) and "area" (Copenhagen/Fredriksberg and National). Generate those two factors.
- Fit a Poisson regression model to the data with age, period, and area as descriptors, as well as the three two-factor interaction terms. The interaction between period and area can be interpreted as the effect of screening (explain why). How should person-years under study be used in the model?
- Check the model with plots and quasipoisson fit.