More practices
(Logistic Regression)

Data: respiratory data

- ID: subject identifier
- Cent: Center where patient was treated
- Treat: Treatment patient received, 1=placebo, 2=active
- Sex: Sex of patient, 1=male, 2=female
- BL: Baseline respiratory status (0=poor, 1=good)
- Age: Age of patients in years

- **V1**: Respiratory status at first visit after treatment has begun (0=poor, 1=good)
- **V4**: Respiratory status at fourth visit after treatment has begun (0=poor, 1=good)

Data: respiratory data

- Fit a logistic regression model for **good respiratory status** after the first visit **(V1=1)**
- Include all 5 predictors; Cent, Treat, Sex, Age, and BL

- Use **backward selection** with BIC criteria to choose the best model.
- Interpret what the odds ratios tell us about the relationship of the predictors to good respiratory status at the first visit.
- Goodness-of-fit test to see if model is adequate
- Check **residual plots** and **Cook's d measures**
  - Use cook's d cut-off as 0.05
- Check classification result. How good it is? Try different cut-offs. How it changes?

Data: respiratory data

- Repeat for good respiratory status at the fourth visit (V4=1)
- Do not leave observation with Cook's-d > 0.05

- Compare the final model with previous model (significant terms, residual plots etc.)