

- Break into groups
  - Please introduce yourselves. \*
  - Appoint a leader (ideally a new person). Main job: allow/encourage every one to offer an opinion
  - Appoint a scribe. (ideally a new person), Main job: Write down answers.
- I'll try to visit all groups. Ideally please introduce\* yourselves, thanks.
- \* Name, undergrad school & major, current department.

## The situation

① We enroll people in a blood pressure lowering study in a local large HMO.

After enrollment, we followed people for 4 additional years, with annual cholesterol, blood pressure, <sup>SBP, DBP</sup> temperature and heart rate measurements.

We have data on  $n$  people, 5 measurements  $y_{ij}$   $i=1, \dots, n$  and  $j=0, 1, \dots, 4$  where  $j$  indexes year,  $i$  indexes people and  $y_{ij}$  could be any one of the outcomes.

Profile plots of the data suggest a linear trend seems appropriate for individuals, though intercepts and slopes

②

vary from person to person,

What is good about the following procedures?

The P.I. calculates  $\hat{B}_i$ , the slope for the  $i^{\text{th}}$  person and reports

$$\bar{B} = \frac{1}{n} \sum_{i=1}^n \hat{B}_i$$

$$SD = \frac{1}{n} \sum_{i=1}^n (\hat{B}_i - \bar{B})^2$$

$$\text{and } SE(\bar{B}) = \frac{SD}{\sqrt{n}}$$

a) The P.I. reports  $\bar{B}$  as an estimate of the average rate of decline.

b)  $\bar{B} \pm 2 SE(\bar{B})$  as a 95% CI for the true average rate of decline

c) SD is the standard deviation

of people's various rates of decline.

d) Pretend cholesterol is one measurement. Of the 5 outcomes: cholesterol, SBP, DBP, temperature, heart rate, what is the real time trend <sup>in individuals and overall</sup> over 5 years in this study? (Your best guesses.)

- Please add <sup>all</sup> your names to the write up
- Enough time?
- Email to [robweiss@ucla.edu](mailto:robweiss@ucla.edu)

Thanks!