Can we teach epidemiologists to write like Einstein

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Flexible time table

Time	Activity	Who
10.30-11.00	Introduction	Deborah
11.00-11.45	Interactive exercise	Everyone
11.45-12.00	Comfort Break	Everyone
12.00-12.30	Discussion	Everyone

Everything should be made as simple as possible but no simpler

i.e. we should make our scientific written (and verbal) communication as non-technical as possible, without making it incorrect. Because:

- Epidemiology is an interdisciplinary discipline and we need to be able to communicate well with each other
- Our research should be accessible and understandable to the population to which it is relevant (emphasis on public and patient engagement)
- Participant involvement
- Patient involvement

General principles

- Concise
  - even with unlimited wordcount
- Consistency ; e.g.
  - either *control for* or *adjust for* throughout
  - either *hypertension* or high *blood pressure* throughout
- Clarity
  - Where a technical term is needed, explain what it means first time you write it
- Read drafts aloud
  - Thing about whether a lay person you know would understand it all

The exercise

- We will present examples and ask you to think of alternative ways of writing the example test to make them more understandable to a wide audience
- You will work in groups
- We will share suggestions
- Deborah, Neil & Mary will write down your suggestions, add them to these slides and circulate the slides to everyone

Example 1

Exposure variables (Years of education, BMI and pack years of smoking) were split into quartiles and the effect of them on the outcome per quartile unit was explored with logistic regression.

Example 1 Neils suggestion

The key exposure variables were: (i) years of education; (ii) BMI; and (iii) pack years of smoking.

For each of these we divided them into four categories with equal numbers (quartiles). Fo reach variable, the lowest quartile was taken as the reference, and effect measure (odds ratio) for each of the other three categories compared to the lowest category was estimated with logistic regression.

Example 1 Deborah's suggestion

Our exposures were years of education, body mass index (BMI) and pack years of smoking. We split each of those into quarters. Then, we calculated the odds ratio of the outcome for each quarter increase in years of education, BMI and pack years of smoking.

Example 1 Points for discussion

Why use quartiles (or tertiles, quintiles etc.), when quarters (thirds, fiths) are likely to be much more widely understood?

Writing in the first person is often easier to understand

Though Deborah's suggestion is longer. It is probably useful to have shorter sentences and start by explaining what the exposures are.

Example 2

Caesarean section was classed as an elective procedure where there was no fetal compromise, it was non-urgent, and was scheduled to take place at a time to suit the woman and the health care team. Emergency caesarean section was defined as any non-elective caesarean section.

Example 2 Neils suggestion

We classified caesarean section as an elective procedure when: (i) there was no fetal compromise; (ii) it was non-urgent; and (iii) it was scheduled to take place at a time to suit the woman and the health care team.

Any non-elective caesarean section, was classified as an emergency caesarean section.

Example 2 Deborah's suggestion

We classified caesarean section as an elective procedure if it all of the following were true:

a. It was done at a time that did not risk the health of the fetus;
b. was done as an emergency;
c. was scheduled to take place at a time to suit the woman and the health care team.

We classified emergency caesarean as any Caesarean section that tid not fit the criteria of an elective Caessarean section . epidural).

Example 2 Points for discussion

Again shorter (and more) sentences

Can be useful to use lists when you are explaining criterial

Use of first person

Simplar language, e.g. ‘if the following are true)

Example 3

A prospective cohort study was conducted of employees of a textile factory.

The subjects were 10,545 operatives who were followed from date of first employment until 31/12/2023.

1,030 individuals were lost to follow-up.

Example 4

Studies of disorders that are strongly influenced by age (such as neurodegenerative disease) may be prone to bias if selective mortality has occurred. For example, if people with high body mass index (BMI) died prematurely before being diagnosed with Parkinson's Disease (PD), then bias could occur because individuals with lower BMI live longer, resulting in a greater risk of being diagnosed with PD. Such an induced association would not reflect any biological link between high BMI and PD.

Example 5

Studies of disorders that are strongly influenced by age (such as neurodegenerative disease) may be prone to bias if selective mortality has occurred. For example, if people with high body mass index (BMI) died prematurely before being diagnosed with Parkinson's Disease (PD), then bias could occur because individuals with lower BMI live longer, resulting in a greater risk of being diagnosed with PD. Such an induced association would not reflect any biological link between high BMI and PD.

Example 6

The observational association between early menarche and adverse cardiometabolic health outcomes is partly attributable to genetic variants which are associated with both earlier menarche and increased BMI. However, menarche timing may also have an independent causal effects on cardiometabolic traits. It remains unclear whether associations between menarche variants and later health outcomes are mediated directly through an effect on menarche timing, or whether they have pleiotropic effects on puberty and cardiometabolic health.

Example 7

We included samples from three birth cohorts from the UK, New Zealand and Norway. These subjects were recruited during their mothers pregnancies between 2007-2010, in 1077, and 1998 to 2008. Further details of the studies can be found in supplementary table 1.

Example 8

Success of this method crucially depends on timely delivery of the drug and on correct dosing, as delayed or incorrect administration would lead to development of resistance in the population, which we saw in Kosovo, where migrant workers were missed and children overdosed, resulting in a fresh epidemic, comatose infants and loss of trust in the health services, something the government cannot afford and must avoid in the future.

Example 9

To study the mechanisms involved in the beneficial effects of hydralazine on ventricular function in patients who have chronic aortic insufficiency, a radionuclide assessment of ventricular function was performed in 15 patients with pure aortic insufficiency, functional capacity I or II, at rest and during supine exercise.

Example 10

We collected data on all deaths in women age 15 to 49 over a period of 14, 10 and 13 years in Niakhar, Bandafassi and Mlomp, respectively, from the ongoing demographic surveillance systems. Then we interviewed relatives of all deaths using a standard questionnaire ….