Preclinical animal efficacy studies and drug development

- Most basic science journals do not evaluate studies solely based on their translational impact or drug development application
- Many studies would not even be considered ‘pre-clinical’. Rather, many studies just look at biological phenomena using animal models.
- Poor reporting does not negate the biological result in many cases.
- **Not clear that quality of reporting is the major factor in lack of translation from published studies to drug discovery.**

Improving quality of published studies using animal models

- Multiple issues could be at play here, including bad experimental design, over-arching conclusions, biased experimentation, inappropriate statistics, biased reporting etc
- Most of these major issues are caught during peer-review.
- Most journals do have statistical guidelines, as well as checklists of good experimental reporting, but there is no one set of standards that will fit *all* studies.
- Limits to journals' power: Journals rely on peer-referees to help spot errors and so it is difficult to enforce guidelines that do not have community buy-in.

What do journals currently do?

- All NPG journals have statistical and reporting guidelines that stress accurate reporting and design in their guide to authors.
- Recommend that authors follow many of the guidelines outlined in ARRIVE. We do implement CONSORT guidelines for reports of clinical trials.
- Referees are also asked to comment on adequate reporting and statistical practices.
- Editors and copyeditors check for some common issues of reporting (n not defined, error bars not defined) when paper is accepted.
- Authors are often unaware of good statistical practices (adequate sample size etc) and not all referees bring this up.
- Very difficult to enforce reporting of ALL possible variables.

Practically what can editors do?

- Look out for common mistakes.
- Train ourselves, authors and referees in better reporting and statistical standards.
- We allow on-line methods up to 2000-3000 words and encourage authors to properly report.
- Commit to running corrigenda if key methods details are not included in published paper

Practically speaking

- Education of editors, authors and referees on best statistical and reporting practices ongoing process.
- We are committed to good reporting practices in our journals.
- Good reporting guidelines adopted by virtually all journals have been shown to help improve reporting (eg, CONSORT)
- Practically, essential to identify the key critical reporting details that would be of most value for further translational or drug-development study.
- Need help from this community to reach a consensus on such reporting priorities
- --Ex, statement on blinding.