Interpreting Clinical Trials

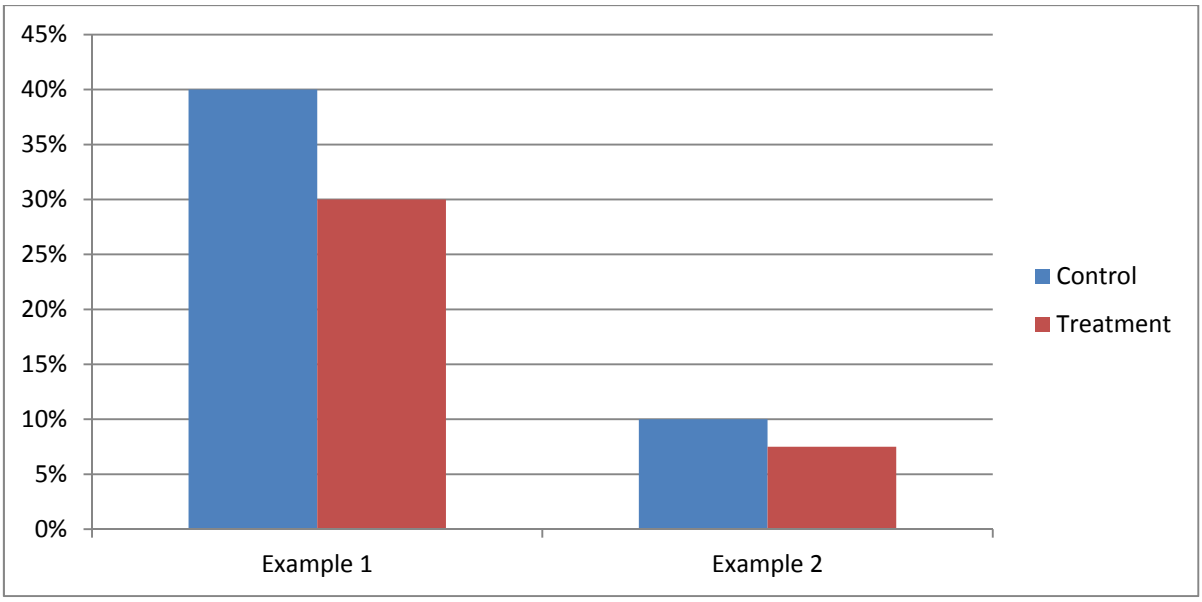
NHS Wiltshire Clinical Commissioning Group

Information

- This guide is designed as an Aide Memoir when interpreting clinical trial data

RRRs, ARRs, NNTs etc

- Example 1 - a randomised controlled trial (RCT)
  - 40% of people died despite using medicine A
  - Only 30% of people died when they were given medicine B
- Example 2 - another RCT
  - 10% of people died despite using medicine A
  - Only 7.5% of people died when they were given medicine B



Measure	What is it?	How is it calculated	
		Example 1	Example 2
Relative Risk Reduction (RRR)	Relative measure of the difference in risk between treatment and control group **i.e. control rate minus experimental rate divided by control rate**	40% - 30% (=10%) / 40% = ¼ = **25%**	10% - 7.5% (=2.5%) / 10% = ¼ = **25%**
Absolute Risk Reduction (ARR)	Absolute measure of the difference in risk between the two groups **i.e. control rate minus experimental rate**	40%-30% = **10%**	10% - 7.5% = **2.5%**
Number Needed to Treat (NNT)	The number of people you need to give medicine B rather than medicine A for one to benefit **i.e. 100 divided by the ARR(%)**	100/10 = **10**	100/2.5 = **40**

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Statistics

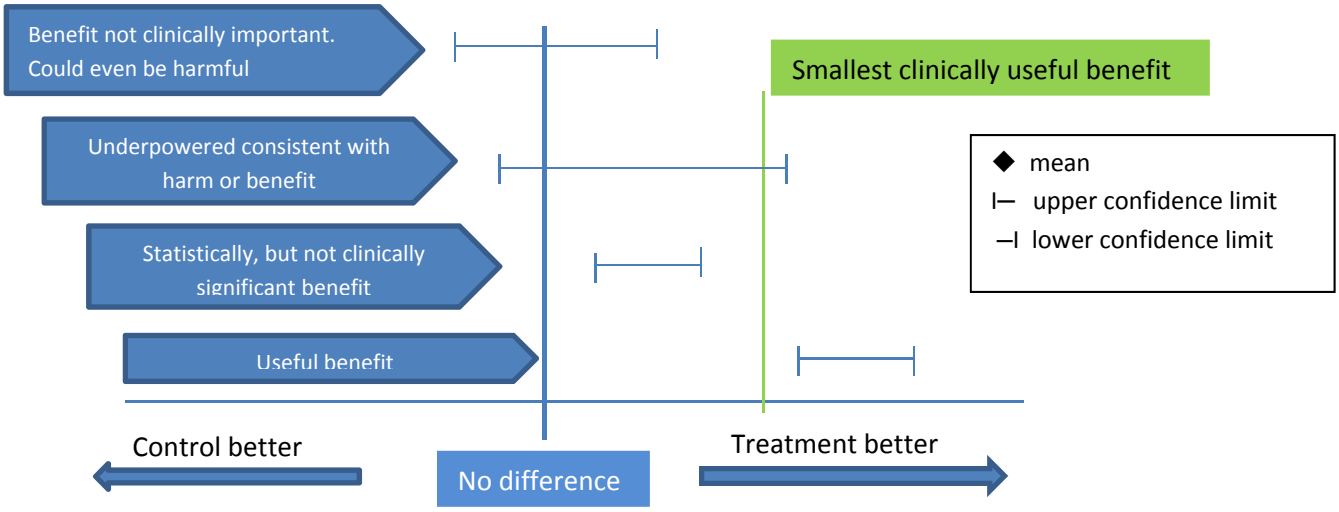
P value

- "**P**robability" level i.e. the likelihood that the difference observed between two interventions could have arisen by **chance**
- **Arbitrarily** set at 1 in 20, e.e. P= 0.05, or 5% risk
- This means 5 in 100 or 1 in 20 i.e. there is a 1 in 20 chance this result could have occured by chance
- Depends on several factors
  - how **large** the effect was
  - how **consistent** the effect was
  - how **many** patients were studied
- As all of these factors increase, the likelihood of finding clinical significance increases, **BUT** once we've decided the difference was **NOT** due to chance, we have have to decide on **clinical significance**
  - Patient Oriented Outcomes (POO's) vs Disease Oriented Outcomes (DOO's)
  - Size of the effect

Confidence Intervals

- Confidence intervals are the range of values between which we could be 95% certain that this result would like if this intervention was applied to the general population

Interpreting Confidence Intervals



Power

- Power is the abilit of the study to detect an effect if in truth there is an effect
- A RCT may be underpowered if
  - the duration is too short (too few events)
  - it includes too few people (too few events)
  - the wrong outcome was used (too few events)
  - Expecting a higher level of statistical proof than is realistic for the condition and the intervention being tested