



PROs in Respiratory: Where have we been, where are we going?

Mike Spencer
Global Health Outcomes
GlaxoSmithKline



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 - Derivation of Minimum Clinically Important Differences(MCID)
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Where have we been



Derivation of MCID



Anchor based methods

- Change in instrument related to change in external anchor
- Differences in group means related to differences in disease state or prognosis (criterion referencing)



Distribution Based Methods

- A variety of standards are applied
- Relationship to anchor based methods postulated
- "clinically" relevant?



Analysis



Comparison of means

- Standard statistical method
- Measures aggregate benefit over a population
- Retains maximum information
- What is a large difference?
- How do we relate it to the MCID



Analysis of categorized data

- Percentage of patients reaching MCID
- Easy interpretation - if the MCID is appropriate
- Loss of power for statistical testing
- Need to consider direction of change in chronic deteriorating conditions such as COPD



Analysis of Slope

- Analysis of trend in score over time
- Powerful and relevant analysis in certain conditions
- Requires long follow up
- Differential withdrawal is a problem
- Need to exclude initial improvements from analysis
- Still have to decide what is a meaningful effect

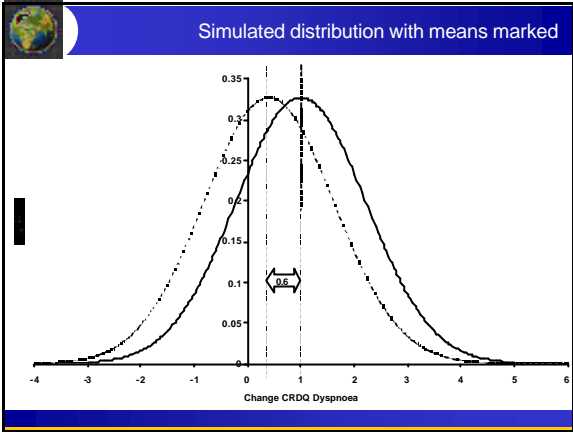


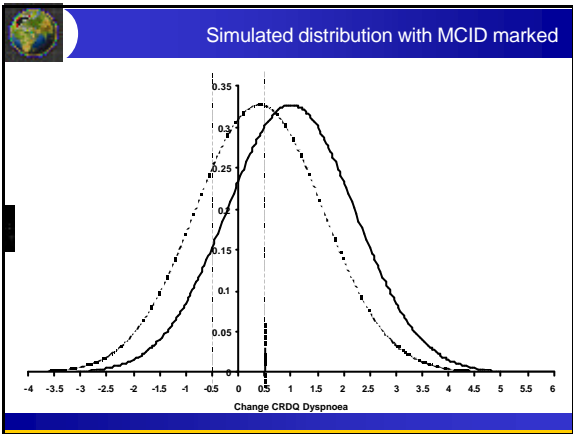
Interpretation and presentation

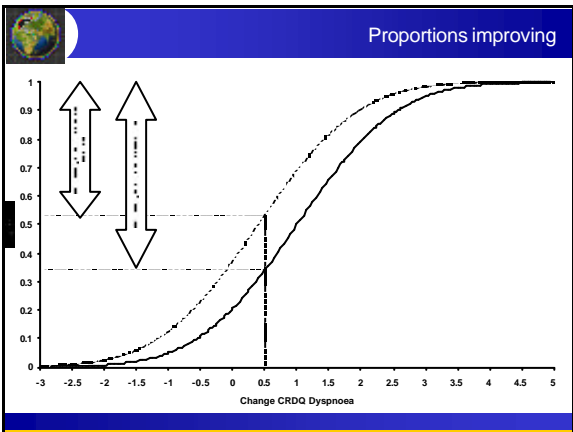


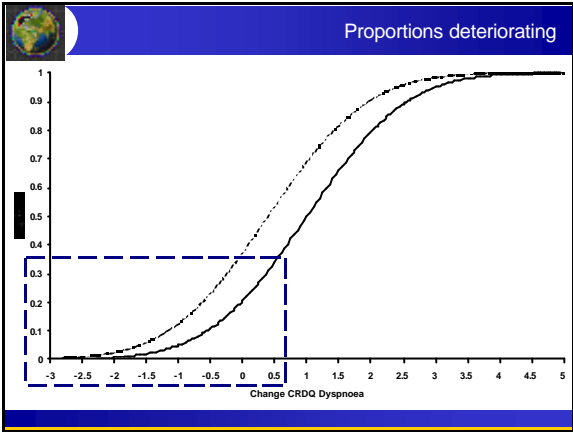
Numbers Needed to Treat

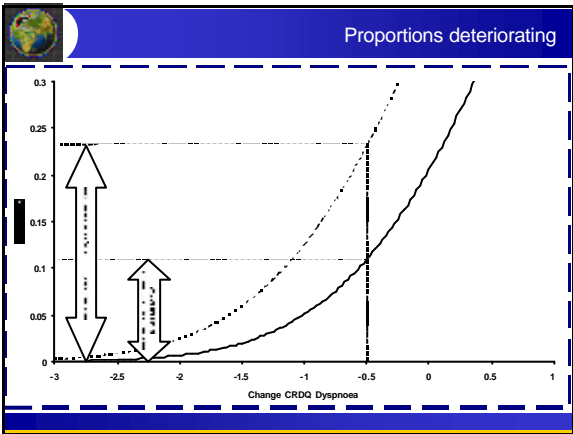
- Accounts for deterioration and improvement
- Well recognised Evidence Based Medicine presentation
- Relies on categorisation by MCID
- Is the MCID the same for an improvement as a deterioration









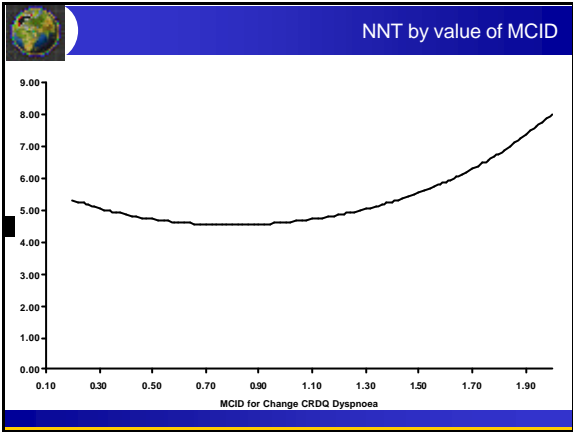


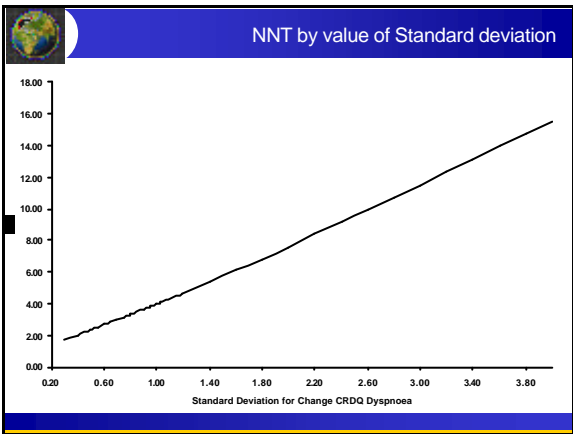
Calculation of NNT

	PR		
	Improved	Unchanged	Deteriorated
Control	0.66	0.23	0.11
Improved	0.47	0.31	0.11
Unchanged	0.30	0.20	0.07
Deteriorated	0.23	0.15	0.05

Conditional Probabilities of a patient being at least one category better off can be estimated and hence the NNT

PR better	0.40
Control Better	0.19
Ratio	2.10
Absolute probability	0.21
NNT	4.72





Where are we going



Instruments

- Validated sensitive measures of symptoms other than dyspnoea
- Composite endpoints
- Utility measurement and QALYs



Analysis, presentation and interpretation

- Pragmatic use of MCID as guide
- Improved presentation of data to aid interpretation
- Consideration of more use of scenarios & external anchors
- Improved analytic methods for analysing slopes



List of Abbreviations

MCID - Minimum Clinically Important Difference
SGRQ - Saint George's Respiratory Questionnaire
CRDQ - Chronic Respiratory Disease Questionnaire
TDI - Transitional Dyspnoea Index
SD - Standard Deviation
