Glossary: "... a lexicon of the technical, obscure, or foreign words of a work or field."[1]
Each issue of *Evidence-Based Mental Health* will include a glossary introducing the technical and obscure words used in different fields. The first glossary covered terms used in *diagnosis*. The second covered terms used in *treatment*. The fourth issue covered *meta-analysis* using the article by Marshall and Lockwood.[2]

In this meta-analysis, assertive community treatment (ACT) reduced the likelihood, described as the odds, of being admitted to hospital compared with treatment as usual (TAU). The odds of an event is the probability, or event rate, divided by (1 – event rate). A measure of the relative benefit of the experimental treatment can then be obtained by dividing the experimental odds by the control odds (**odds ratio, OR**). In the example, the OR for admission to hospital with ACT compared with TAU was 0.6. ORs from several studies can be combined using meta-analysis to produce a pooled OR. **Heterogeneity** occurs when there is more variation between the study results than would be expected by chance alone. When heterogeneity occurs, a **fixed effects** pooled ORs may be invalid and a **random effects** pooled ORs should be given. If your **patient's expected event rate (PEER)** is known or can be estimated, a number needed to be treated (NNT) can be calculated from an OR using the following formula:

$$\mathrm{NNT} = \frac{1 - [\mathrm{PEER} \times (1 - \mathrm{OR})]}{(1 - \mathrm{PEER}) \times \mathrm{PEER} \times (1 - \mathrm{OR})}$$

For example, if I use ACT with patients who are 40% likely to be admitted to hospital, I need to treat about 9 patients to prevent one admission that would have occurred with TAU.

In meta-analyses of continuous outcomes, the **effect size** is the pooled estimate of a treatment's effectiveness. By referring to statistical tables, we can obtain the proportions of the Normal distribution above and below the effect size or **z** *value*. This is the proportion of control group scores that are less than the average score in the experimental group. For example, Nowell *et al* reviewed the effectiveness of benzodiazepines and zolpidem compared with placebo on total sleep time and found an overall effect size of 0.71 (95% CI 0.55 to 0.87).[3] This would mean that 76% of control scores would be less than the average score in the experimental group (table).

1 *Funk and Wagnall Standard Desk Dictionary*. New York: Funk and Wagnall, 1986:278.
2 Review: assertive community treatment is an effective alternative in severe mental disorders [abstract]. *Evidence-Based Mental Health* 1998 Nov;**1**:115. Abstract of: Marshall M, Lockwood A. Assertive community treatment for people with severe mental disorders (Cochrane Review, latest version 25 Feb 98). In: *Cochrane Library*, Oxford: Update software.
3 Review: benzodiazepines and zolpidem are effective for chronic insomnia [abstract]. *Evidence-Based Mental Health* 1998 Nov:**1**:117. Abstract of: Nowell PD, Mazumdar S, Buysse DJ, *et al*. Benzodiazepines and zolpidem for chronic insomnia. A meta-analysis of treatment efficacy. *JAMA* 1997 Dec 24/31;**278**:2170–7.

Percentage of control scores that would be below the average experimental score for various effect sizes

Effect size	*Percentage of control scores which would be below the average experimental score*
0	50
0.4	66
0.8	79
1.0	84
1.6	95

Terms used in therapeutics (see glossary in *Evidence-Based Mental Health* 1998 May for more detail)

WHEN THE EXPERIMENTAL TREATMENT INCREASES THE PROBABILITY OF A GOOD EVENT:

RBI (relative benefit increase): the increase in the rates of good events, comparing experimental (EER) and control (CER) patients in a trial, also calculated as |EER – CER|/ CER.

ABI (absolute benefit increase): the absolute arithmetic difference in event rates of a positive outcome, |EER – CER|.

NNT (number needed to treat): calculated as 1/ABI, and denotes the number of patients who must receive the experimental treatment to create one additional improved outcome in comparison with the control treatment. The lower the NNT, the more effective the intervention.

WHEN THE EXPERIMENTAL TREATMENT REDUCES THE RISK OF A BAD EVENT (SUCH AS PREVENTING RELAPSE), THE SAME CALCULATIONS CAN BE USED BUT WITH SLIGHTLY DIFFERENT TERMINOLOGY:

RRR (relative risk reduction): the proportional reduction in rates of bad events between experimental (EER) and control (CER) participants in a trial, calculated as |EER – CER|/CER.

ARR (absolute risk reduction): the absolute arithmetic difference in event rates, |EER – CER|.

NNT: the number of patients who need to be treated to prevent one additional bad outcome, calculated as 1/ARR.

WHEN THE EXPERIMENTAL TREATMENT INCREASES THE PROBABILITY OF A BAD EVENT:

RRI (relative risk increase): the increase in rates of bad events, comparing the experimental patients to control patients in a trial, and calculated as |EER – CER|/CER.

ARI (absolute risk increase): the absolute difference in rates of bad events, when the experimental treatment harms more patients than the control treatment, and calculated as |EER – CER|.

NNH (number needed to harm): the number of patients who, if they received the experimental treatment, would lead to 1 additional person being harmed compared with patients who receive the control treatment, and calculated as 1/ARI.

Confidence interval (CI): The CI quantifies the uncertainty in measurement; usually reported as 95% CI, which is the range of values within which we can be 95% sure that the true value for the whole population lies.

Terms used in diagnosis (see glossary in *Evidence-Based Mental Health* 1998 Feb for more detail)

THE FOLLOWING TERMS ARE USED IN COMPARING A NEW TEST AGAINST A DIAGNOSTIC (GOLD) STANDARD:

Prevalence: the proportion of people in the sample who have the disorder.

Sensitivity: the proportion of people who have the disorder (according to the diagnostic [gold] standard) who are detected by the test.

Specificity: the proportion of people who do not have the disorder (according to the diagnostic [gold] standard) who are determined by the test to not have the disorder.

Positive predictive value: the proportion of people who score positive on the test who actually have the disorder.

Negative predictive value: the proportion of people who score negative on the test who actually do not have the disorder.

Likelihood ratio for a positive test result: the likelihood that a positive test comes from a person with the disorder rather than one without the disorder = sensitivity/(1 – specificity).

Likelihood ratio for a negative test result: the likelihood that a negative test comes from a person with the disorder rather than one without the disorder = (1 – sensitivity)/specificity.