

DESIGN & ANALYSIS OF QUALITATIVE DATA IN PT SCHEME

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PERFORMANCE EVALUATION OF QUALITATIVE DATA

TYPE OF DATA:

- (a) Categorical or Nominal
(e.g) Yes / No
Present / Absent
HIV +/HIV -
- (b) Ordinal
(e.g) GRADES or RANKINGS
1= Poor, 2= Unsatisfactory, 3= Satisfactory,
4= Good, 5 = Very good
Difference between 1&2 and 3&4 NOT SAME

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PERFORMANCE EVALUATION OF QUALITATIVE DATA

PT Schemes with qualitative or semi quantitative data require special considerations for:

- ✓ Design of PT Scheme
- ✓ Value Assignment (Assigned Value)
- ✓ Performance evaluation and scoring

Statistical treatment meant for continuous valued data is not applicable –

i.e. Average, S.D are not applicable

Assigned Values are often based on EXPERT OPINION

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QUALITATIVE DATA

Statistical design

- ☐ Where **expert opinion** is essential either for Value Assignment or assessment of participant reports, PT Provider to ensure
 - to **assemble** a panel of qualified experts, and
 - to provide **time for debate** in order to achieve consensus on the assignment
- ☐ PT Provider should assess and control the **consistency of opinion** among different experts
- ☐ To provide **multiple PT items** or request the results of a number of **replicate observations**
- ☐ **Homogeneity** of PT items should be demonstrated

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QUALITATIVE DATA

VALUE ASSIGNMENT

- ☐ By Expert judgement
- ☐ By use of RM as PT item
- ☐ From knowledge of origin or preparation of PT items
- ☐ Using "MODE" or "MEDIAN" of participant results

UNCERTAINTY OF ASSIGNED VALUE

It is not appropriate to provide quantitative information regarding the uncertainty of Assigned Value . But, it is **required to provide basic information relating to confidence in the Assigned Value**. This will enable the participant to judge whether a poor result might reasonably be attributable to an error in the Value Assignment

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QUALITATIVE DATA

VALUE ASSIGNMENT

BY EXPERT JUDGEMENT

- ☐ Based on consensus among qualified experts
- ☐ Any significant disagreement among the panel should be incorporated in the PT report
- ☐ In case of no consensus among experts consider alternative method of Value assignment. If that is not appropriate, PT items are not to be used for performance evaluation

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QUALITATIVE DATA
VALUE ASSIGNMENT
 BY USE OF RM AS PT ITEM

- ☐ Associated reference /certified value to be used as Assigned Value
- ☐ Any information provided with the RM relating to confidence in the Assigned Value should be available to participants, after the PT round (in PT report)

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QUALITATIVE DATA
VALUE ASSIGNMENT
 WHERE PT ITEMS ARE PREPARED FROM A KNOWN SOURCE

- ☐ Assigned Value may be determined from the origin of the constituents of the material
- ☐ Records of origin, transport and handling of the materials used are to be maintained
- ☐ Confirmatory tests or measurements are recommended, where possible
- ☐ Evidence of origin and/or details of preparation should be made available, after the PT round

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QUALITATIVE DATA
VALUE ASSIGNMENT
 WHERE "MODE" or "MEDIAN" OF RESULTS ARE USED

- ☐ "MODE" can be used as Assigned Value for results are reported on both categorical or ordinal scale
- ☐ "MEDIAN" can be used as Assigned Value for results are reported on ordinal scale only
- ☐ Average and SD are not to be used
- ☐ PT report to incorporate a statement regarding proportion of results that matched with the Assigned Value

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PERFROMANCE EVALUATION & SCORING for Qualitative PT Schemes

- ❑ Simple evaluation involves comparison of participant's result with Assigned Value – **PT PROVIDER HIMSELF CAN DO THIS**
- ❑ Complex evaluation involves significant amount of evaluation of participants results – **EXPERT APPRAISAL IS NEED FOR THIS**
- ❑ When expert appraisal is done ensure:
 - Identity of participants is not known to expert(s)
 - Review, marking & performance assessment follow a set of PREVIOUSLY AGREED CRITERIA that are objective
 - Consensus among experts is ensured
 - Provision is made for participant appeal against an opinion and/or secondary review of opinions close to any important performance threshold

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SCORING for Qualitative PT Schemes

Two systems are used

- ❑ Mark each result if it exactly matches with the Assigned Value as **acceptable** and score as success – say **score of one (1) point**. Otherwise treated as **unacceptable** and given an adverse score – say **score of zero (0) point**
- ❑ When results can be in in **grades or ranks** such as 1,2,3,4 and 5 – mark each result matching exactly with the Assigned Value as **acceptable** and given a **score of five(5) points**. For the remaining scores which are not matching exactly with the Assigned Value give appropriate **less score** depending upon the mismatch. Score for each different in grade or rank may be reduced by (say) 2 points until final score becomes zero for the result which is farthest from the Assigned Value.

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COMBINED SCORES or SUMMARIES for Qualitative PT Schemes

- ❑ When multiple replicates are reported for each PT item or when multiple PT items are provided, **combined scores or summaries** can be calculated and used
- ❑ **Combined scores or summaries** can be calculated as
 - Simple sum of scores across all PT items (or replicates)
 - Count of each level of score allocated
 - Proportion of correct results

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