11 Analysis tables, worksheets, and checklists

Table 11.1 Analysis specification table (AnalSpec.Tab)

When: Early in the course of the trial, ideally before the start of data collection and reviewed and periodically updated over the course of the trial

Who: Leadership persons in the data center

Purpose: To cause study leaders to be proactive in addressing key questions regarding approaches to analysis

Definitions

design variable - The variable used for determining sample size in planning a trial.

final dataset - The dataset compiled on completion of a study for use in final data analysis and for archiving.

interim analysis - Any analysis for treatment effects before data collection is finished.

interim dataset - A dataset prepared during a trial for some purpose, especially one prepared for treatment effects monitoring and involving a snapshot of data collected and processed through a specified cutoff date.

primary outcome - The event or condition a trial is designed to treat, ameliorate, delay, or prevent.

A. Identifying information

1. Study name: _____

2. Form completed by: _____

3. Date completed (day-month-year) . . . . . __—___—____

B. Basics

4. Primary mode of data collection
   ( ) Direct from study subjects via examination and interview
   ( ) Indirect
      ( ) From medical records
      ( ) Other (specify)

      _____

5. Primary method of data entry
   ( ) At collection sites
      ( ) via laptops
      ( ) From completed forms via the internet web

Table 11.1 Analysis specification table

( ) Other (specify)

_____

( ) At the data center from completed data forms
( ) Other (specify)

_____

6. Official repository of study data
   ( ) Data center/coordinating center
   ( ) Sponsor
   ( ) Contract research organization
   ( ) Other (specify)

_____

7. Official study analysis center
   ( ) Data center/coordinating center
   ( ) Sponsor
   ( ) Contract research organization
   ( ) Other (specify)

_____

8. Access to interim treatment results
   ( ) Restricted
      ( ) Limited to data center
      ( ) Limited to data center and treatment effects monitoring committee (TEMC)
      ( ) Limited to data center, TEMC, and sponsor
      ( ) Other (specify)

_____

   ( ) Unrestricted within the investigator group
   ( ) Other (specify)

_____

9. Primary outcome measure
   ( ) Event
      ( ) Death (all cause)
      ( ) Cause specific death (specify)

_____

( ) Morbid event (specify)

_____

( ) Other (specify)

_____

( ) Change measure (specify)

_____

( ) Other (specify)

_____

10. The variable used for sample size calculations (design variable)
    ( ) Same as in item 9
    ( ) Different from item 9 (specify variable used)

    _____

11. Publication policy (check all that apply)
    ( ) Publication of treatment results prior to presentation
    ( ) Publication of interim results leading to a decision to halt treatment because of evidence of harm or of benefit
    ( ) Publication of final treatment results regardless of direction or nature and prior to presentation
    ( ) Other (specify)

    _____

C. Counting and analysis rules and principles

12. Definition of "primary analysis" (check all that apply)
    ( ) Treatment comparisons involving the primary outcome
    ( ) Treatment comparisons based on analyses by assigned treatment
    ( ) Analysis of greatest relevance to the objective of the trial
    ( ) Treatment comparisons involving all persons randomized by treatment assignment
    ( ) Other (specify)

    _____

13. Definition of "secondary analysis" (check all that apply)
    ( ) Treatment comparisons involving a secondary outcome measure
    ( ) Treatment comparisons of relevance to a secondary aim of the trial
    ( ) Treatment comparisons not according to the intention to treat (ITT) principle

( ) Other (specify)

_____

14. Definition of "subgroup analysis" (check all that apply)
    ( ) Treatment comparisons within subgroups of people defined by baseline or entry characteristics
        ( ) Subgroups specified when trial was designed
        ( ) Subgroup analyses performed to check on homogeneity of treatment effects across subgroups
    ( ) Treatment comparisons within subgroups of people defined by variables observed after randomization
    ( ) Other (specify)

    _____

15. Counting principles and rules (check all that apply)
    ( ) Person counted as randomized when treatment assignment revealed to clinic personnel
    ( ) Person counted to assigned treatment group in primary analyses regardless of subsequent nature or course of treatment
    ( ) Outcomes counted to the assigned treatment regardless of nature or course of treatment
    ( ) The starting point for counts of events is the moment of randomization, even if events observed before application of the first treatment

16. Primary treatment comparisons to be done by the intention-to-treat analysis principle?
    ( ) Yes
    ( ) No (explain)

    _____

    _____

    _____

17. If item 16 is answered "yes" and there are three or fewer checks in item 15, explain; counting rules inconsistent with requirements for ITT analyses

    _____

    _____

    _____

Table 11.1 Analysis specification table

D. Interim analyses for treatment effects monitoring

18. Person/group responsible for treatment effects monitoring
    - ( ) Study statistician
    - ( ) Committee
    - ( ) Other (specify)

    _____

19. Frequency of interim looks
    - ( ) Calendar-based (e.g., every 6 months)
    - ( ) Enrollment-based (e.g., after enrollment of the 50th person, 100th person, etc.)
    - ( ) Event-based (e.g., after a specified number of outcomes)
    - ( ) Other (specify)

    _____

20. Monitoring constructs (check all that apply)
    - ( ) Masking
    - ( ) Stopping rule
    - ( ) Stopping guideline
    - ( ) Adjustment of p-values for multiple looks
    - ( ) Adjustment of p-values for multiple comparisons
    - ( ) None
    - ( ) Other (specify)

    _____

E. Datasets

21. Interim datasets (check all that apply)
    - ( ) Prepared by data center
    - ( ) Analyses performed by data center
    - ( ) Analyses done from frozen dataset
    - ( ) Analyses done from live dataset
    - ( ) Dataset includes data under edit
    - ( ) Dataset excludes data under edit

22. Datasets underlying results publications (check all that apply)
    - ( ) Cutoff date and rationale listed in publication
    - ( ) Dataset available on request
    - ( ) Data center custodian of dataset
    - ( ) Other (specify)

    _____

23. Final dataset (check all that apply)
    - ( ) Cutoff date beyond which edits and changes no longer accepted

( ) Cutoff date listed in publications based on the final dataset
( ) Notice of availability of deidentified dataset included in primary results publication
( ) Other (specify)

_____

F. Review and sign-off approval

24. Name of review and approving authority: _____

25. Date of sign-off (day-month-year) . . . . . __—__—____

CL 11.1 Interim analysis checklist (IntAnal.Cl)

When: In relation to interim analyses done for treatment effects monitoring

Who: Senior analysis people in the coordinating center

Purpose: To outline checking procedures for a particular meeting of the treatment effects monitoring committee

Definition

interim data analysis - Any data analysis for treatment effects before data collection is finished.
Usage note: Strictly speaking, the term applies to any analysis in fixed or sequential sample size designs. However, the general convention is to reserve the term for fixed sample size designs and "sequential data analysis" for analyses done in relation to sequential designs.

A. Identifying information

1. Study name: _____

2. Interim analysis for treatment effects monitoring committee meeting of: . . . . . __—___—____

3. Form completed by: _____

4. Date (day-month-year) . . . . . __—___—____

B. Dataset and analysis policy

5. Analysis dataset
   ( ) Live
   ( ) Frozen (recommended)
   Freeze date . . . . . __—___—____

   Data harvest through: . . . . . __—___—____

6. Dataset prepared by:
   ( ) Coordinating center
   ( ) Contract research organization
   ( ) Sponsor
   ( ) Other (specify)

   _____

7. Features of the dataset (check any that apply)
   ( ) Dirty data (data with outstanding edits) included
   ( ) Imputation of missing values
   ( ) Data not deidentified

( ) Other (specify)

_____

8. Analysis done by:
   ( ) Coordinating center
   ( ) Contract research organization
   ( ) Sponsor
   ( ) Other (specify)

   _____

9. Purpose of analysis
   ( ) Efficacy analysis
   ( ) Safety analysis
   ( ) Efficacy and safety analysis

10. Counting principles and rules (check all that apply)
    ( ) Person counted as randomized when treatment assignment revealed to clinic personnel
    ( ) Person counted to assigned treatment group in primary analyses regardless of subsequent nature or course of treatment
    ( ) Outcomes counted to the assigned treatment regardless of nature or course of treatment
    ( ) The starting point for counts of events is the moment of randomization, even if events observed before application of the first treatment
    ( ) Other (specify)

    _____

11. Treatment comparisons adjusted for baseline difference?
    ( ) No
    ( ) Yes
    If "yes" list variables used for adjustment

    _____

12. P-values for treatment comparisons adjusted for multiple looks?
    ( ) No
    ( ) Yes
    If "yes" describe adjustment

    _____

C. Content of interim analysis report (check all that apply)

( ) Table of contents
( ) Enrollment by treatment group
( ) Baseline data by treatment group
( ) Dropouts by treatment group
( ) Losses to followup by treatment group
( ) Persons with vital status unknown by treatment group
( ) Treatment comparisons for primary outcome measure by treatment group
( ) Treatment comparisons for secondary outcome measures by treatment group
( ) Treatment comparisons for safety outcome measures
( ) Treatment comparisons within baseline subgroups of patients for the primary outcome measures
( ) Treatment comparisons within baseline subgroups of patients for secondary outcome measures
( ) Other (specify)

_____

D. Table layout and treatment labels

13. "As of date" cutoff date the same for all tables?
    ( ) Yes
    ( ) No (explain why dates differ)

    _____

14. Are treatments masked in the report of interim results?
    ( ) No (skip to item 17)
    ( ) Yes

15. Are all tables masked?
    ( ) Yes
    ( ) No
    If "no" what tables are not masked

    _____

16. For results that are masked is the labeling of treatment groups the same across tables (i.e., is the same code used to identify treatments across all tables in a report)?
    ( ) Yes
    ( ) No; give rationale

    _____

17. Is the ordering of results by treatment group the same across tables?

( ) Yes (e.g., in masked reports the control treatment is in the same column position across tables; in unmasked reports in a trial involving two test treatments, Test Trt 1 and Test Trt 2, and a control treatment, Ctrl 1, the ordering of columns is invariant across tables)
( ) No; explain

18. Are denominator data indicated in tables?
( ) Yes
( ) No (explain why not)

CL 11.2 Results paper analysis checklist (Anal.Cl)

When: In relation to manuscripts containing study results

Who: Senior analysis coordinating center personnel

Purpose: To provide checks to be made when preparing analyses for inclusion in finished manuscripts

Definitions

adjudication - In the context of trials and observational studies, a process involving a person or panel of persons to review raw events reported in a study to provide a coding independent of study investigators. Typically, regarded as superior to counts of raw unadjudicated events because of variation in the way they are reported and because of the risk of bias in how events are codified.

per assignment analysis (PAA) - Analysis by assigned treatment. syn: intention to treat analysis ant: per protocol analysis

per protocol analysis (PPA) - Analysis by administered treatment.

A. Identifying information

1. Study name: _____
2. Title of paper being checked: _____
3. Form completed by: _____
4. Date (day-month-year) . . . . . __—___—____

B. Dataset and analysis policy

5. Analysis dataset freeze cutoff date . . . . . __—___—____
6. Data harvest through: . . . . . __—___—____
7. Database custodian
   ( ) Coordinating center
   ( ) Other (specify)

   _____
8. Rationale for cutoff date included in manuscript
   ( ) No
   ( ) Yes (recommended)

9. Features of dataset (check any that apply)
   ( ) Dirty data (data with outstanding edits) not included
   ( ) Imputation of missing values
   ( ) Cumulative from beginning of trial to cutoff date
   ( ) Other (specify)

   _____

10. Counting principles and rules (check all that apply)
   ( ) Person counted as randomized when treatment assignment revealed to clinic personnel
   ( ) Person counted to assigned treatment group in primary analyses regardless of subsequent nature or course of treatment
   ( ) Outcomes counted to the assigned treatment regardless of nature or course of treatment
   ( ) The starting point for counts of events is the moment of randomization, even if events observed before application of the first treatment

11. Primary mode of presentation of treatment comparisons (check all that apply)
   ( ) P-values for treatment comparisons adjusted for multiple looks
   ( ) Confidence intervals for comparisons
   ( ) Treatment comparisons adjusted for baseline differences
   ( ) Per protocol analysis
   ( ) Missing values imputed
   ( ) None of the above

C. Quality control checks

12. Independent verification of counts represented in manuscript?
   ( ) No
   ( ) Yes (recommended)

13. Independent replication of analyses supporting manuscript?
   ( ) No
   ( ) Yes (recommended)

14. Adjudication of raw event data?
   ( ) No
   ( ) Yes

D. Table checks

15. Counts in tables based on the four counting principles listed in item 10?
   ( ) No (explain)

   _____

   ( ) Yes

16. Denominators for treatment groups indicated in tables?
    ( ) No (fix to include)
    ( ) Yes

17. Is the ordering of results by treatment group the same across tables?
    ( ) Yes
    ( ) No; explain; varied ordering makes comparisons across tables difficult

18. Table titles and footnotes to tables sufficient for persons to understand tables without having to read text in manuscript?
    ( ) No (revise as necessary)
    ( ) Yes

19. Arithmetical numbers in tables right aligned; decimal numbers aligned on decimal?
    ( ) No (revise as necessary)
    ( ) Yes

20. Decimal precision uniform within table and no more than the accuracy of the measure?
    ( ) No (fix)
    ( ) Yes

E. Cross checks

21. Numbers and p-values reported in abstract are as found in tables?
    ( ) No (fix)
    ( ) Yes

22. Numbers and p-values in body of manuscript are as found in tables and figures in the paper?
    ( ) No (fix)
    ( ) Yes

23. Differences in counts as contained in tables explained in text?
    ( ) No (fix)
    ( ) Yes
    ( ) Not applicable

24. Differences in totals across tables explained in text?
    ( ) No (fix)
    ( ) Yes
    ( ) Not applicable

F. Discussion and conclusions

25. Rationale for analysis approach described?
    ( ) No (add)
    ( ) Yes

26. If rates in tables not adjusted for baseline differences, does the text contain a statement indicating that adjustment made no material difference?
    ( ) No (explain)

    _____

    ( ) Yes

27. Baseline comparability of treatment groups addressed in manuscript?
    ( ) No (fix)
    ( ) Yes
        ( ) Baseline table included in paper
        ( ) Other (specify)

        _____

28. Original sample size goal and time table stated in manuscript?
    ( ) No (fix)
    ( ) Yes

29. If the dataset contains data irregularities or if data were purged from the dataset, are the irregularities or purges explained?
    ( ) No (fix)
    ( ) Yes

30. If conclusion is no treatment effect, does the text contain a statement indicating the power for detecting a difference?
    ( ) No (fix)
    ( ) Yes

31. If the treatment effect featured in the conclusions is for a subgroup of study subjects, is the difference likely to be reproducible?
    ( ) No (conclusion questionable)
    ( ) Yes