



# Tplyr Validation Report

Nathan Kosiba

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## Validation Files Information

### Specifications

| Specification Name | Last updated by | Last updated date |
|--------------------|-----------------|-------------------|
| specification.Rmd  | Nathan Kosiba   | 2020-11-05        |

### Test case

| Test Case Name | Last updated by | Last updated date |
|----------------|-----------------|-------------------|
| test_cases.Rmd | Nathan Kosiba   | 2020-11-05        |

### Test code

| Test Code Name | Last updated by | Last updated date |
|----------------|-----------------|-------------------|
| test_cases.R   | Nathan Kosiba   | 2020-11-30        |

## Validation Results

### Specifications

- A: Population data can be specified by the user
- B: Treatment variable can be manually specified for population data
- C: Population data subset can be specified on user specified conditions
- D: Header N counts will be specified by combining different subgroups available within the population data
- E: Manual groups can be specified by combining different subgroups
- F: Analysis data can be specified by the user
- G: Analysis data subset can be specified on user specified conditions
- H: Treatment variable can be manually specified for analysis data
- I: n counts of values within a variable can be produced
- J: n counts of values within a group of variables can be produced
- K: Total n counts can be added
- L: Total row sort value can be specified by the user
- M: Missing n count handling can be specified including presentation and denominator handling
- N: Missing row sort value can be specified by the user
- O: Dummy values can be specified for categories that need to be presented but may not exist within the data
- P: Counts can be produced as n (%)
- Q: When producing n (%), the denominator can be specified using the analysis data
- R: When producing n (%), the denominator can be specified using a particular manually specified subset
- S: When producing n (%), the denominator can be specified using the population data

- T: When producing n (%), the denominator can be specified using grouping of variables
- U: Risk difference including confidence interval can be produced based on specified treatment groupings
- V: Risk difference arguments can be passed forward into prop.test using args parameter
- W: Risk difference can be calculated over user specified cols arguments
- X: Risk difference can be calculated over nested count layers and by variables
- Y: The descriptive statistic of n can be produced based on an input variable
- Z: The descriptive statistic of mean can be produced based on an input variable
- AA: The descriptive statistic of median can be produced based on an input variable
- AB: The descriptive statistic of IQR/Q1/Q3 can be produced based on an input variable
- AC: The descriptive statistic of standard deviation can be produced based on an input variable
- AD: The descriptive statistic of variance can be produced based on an input variable
- AE: The descriptive statistic of min can be produced based on an input variable
- AF: The descriptive statistic of max can be produced based on an input variable
- AG: The descriptive statistic of missing can be produced based on an input variable
- AH: Custom descriptive statistics can be produced based on an input variable and a specified formula
- AI: Descriptive statistics can be performed across discrete values within a grouping variable or a group of grouping variables
- AJ: Multiple statistics can be presented in one line (i.e. combining Q1, Q3 or Min, Max)
- AK: Decimal precision can be specified by the user
- AL: Integer length can be specified by the user
- AM: Decimal precision can be dynamically created from analysis data
- AN: Integer length can be dynamically created from analysis data
- AO: Presentation format can be specified by the user including desired non-numeric text
- AP: Strings are built to align per user specification within a display
- AQ: Descriptive statistic missing values can be set to a user specified string
- AR: Shift n counts of values using two variables, a 'from' and a 'to' variable, can be produced
- AS: Shift n counts of values within a variable can be produced
- AT: Shift n counts of values within a group of variables can be produced
- AU: Dummy values for shift counts can be specified for categories that need to be presented but may not exist within the data
- AV: Shift counts can be produced as n (%)
- AW: For shift counts when producing n (%), the denominator can be specified using the analysis data
- AX: For shift counts when producing n (%), the denominator can be specified using a particular manually specified subset
- AY: For shift counts when producing n (%), the denominator can be specified using the population data
- AZ: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
- BA: Row labels can be manually specified by the user
- BB: Row labels can be nested to put a subgroup within a parent group
- BC: Summaries can be stacked on top of one another
- BD: Summaries can be sorted based on manual sorting by presentation specified order
- BE: Summaries can be sorted based on count based sorting (either ascending or descending) by a specified treatment group
- BF: Summaries can be sorted based on alphabetical sorting based on data values
- BG: Summaries can be sorted based on a numeric version of the target variable if available
- BH: Summary by variables will be sorted by a numeric variable if available and then by factor
- BI: Nested layers can be sorted independently using different methods
- BJ: Independent layers can be sorted using different methods and stacked using common sorting variables
- BK: Count layer default formats can be set at the table level
- BL: Descriptive statistics layer default formats can be set at the table level
- BM: Shift layer default formats can be set at the table level
- BN: Option for count layer default formats can be specified by the user
- BO: Option for descriptive statistics layer default formats can be specified by the user

- BP: Option for shift layer default formats can be specified by the user
- BQ: Option for a cap on auto precision can be specified by the user
- BR: Option for custom descriptive statistics can be specified by the user for use in the table
- BS: Option for setting scipen internal option can be specified by the user
- BT: Option for setting quantile algorithm choice can be specified by the user
- BU: Column headers can be added to the output object
- BV: Row breaks can be added between sections based on grouping variables
- BW: Row labels can be masked in a hierarchical fashion
- BX: A table object is returned in a format that is ready to be cosmetically prepared
- BY: Count layers can process a cols argument and separate population data passed from the table level along with normal count layer processing
- BZ: Count layers can process a cols argument, separate population data, and a defined subset passed from the table level along with normal count layer processing

Matrix

|     | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1  | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T2  |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T3  |   |   |   | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T4  |   |   |   |   |   | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T5  | X | X |   |   |   | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T6  |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T7  |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T8  |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T9  |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   |   |   |   |   |   |   |   |   |   |
| T10 |   |   |   |   |   |   |   |   |   |   |   |   | X | X |   |   |   |   |   |   |   |   |   |   |
| T11 |   |   |   |   |   |   |   |   |   |   | X |   |   |   | X |   |   |   |   |   |   |   |   |   |
| T12 |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   | X |   |   |   |   |   |   |   |   |
| T13 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |
| T14 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |
| T15 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |
| T16 |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   | X |   |   |   |   |
| T17 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X | X |   |   |
| T18 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |
| T19 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| T20 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T21 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T22 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T23 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T24 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T25 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T26 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T27 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T28 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T29 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T31 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T32 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T33 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

(continued)

|     | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T34 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T35 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T36 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T37 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T38 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T39 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T40 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T41 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T42 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T43 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T44 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T45 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T46 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T47 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T48 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T49 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T50 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T51 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T52 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T53 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T54 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T55 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T56 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T57 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T58 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T59 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T60 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| T61 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

|    | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV |
|----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T2 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

(continued)

|     | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV |
|-----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T3  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T4  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T5  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T6  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T7  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T8  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T9  |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T10 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T11 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T12 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T13 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T14 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T15 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T16 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T17 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T18 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T19 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T20 | X | X | X  | X  | X  | X  | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T21 |   |   |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T22 |   |   |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T23 |   |   |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |
| T24 |   |   |    |    |    |    |    |    |    |    |    |    | X  | X  |    |    |    |    |    |    |    |    |    |    |
| T25 |   |   |    |    |    |    |    |    |    |    |    |    |    |    | X  | X  |    |    |    |    |    |    |    |    |
| T26 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  | X  |    |    |    |    |    |    |
| T27 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |
| T28 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |
| T29 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |
| T30 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |
| T31 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |
| T32 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |
| T33 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T34 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T35 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Matrix

Atomus Research

VALIDATION RESULTS



(continued)

|     | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV |
|-----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T36 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T37 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T38 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T39 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T40 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T41 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T42 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T43 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T44 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T45 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T46 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T47 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T48 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T49 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T50 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T51 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T52 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T53 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T54 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T55 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T56 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T57 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T58 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T59 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T60 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T61 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|    | AW | AX | AY | AZ | BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR | BS | BT |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T1 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T2 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T3 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T4 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Matrix

Atomus Research

VALIDATION RESULTS

Tp<sub>lyr</sub> UAT 10

(continued)

|     | AW | AX | AY | AZ | BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR | BS | BT |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T5  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T6  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T7  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T8  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T9  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T10 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T11 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T12 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T13 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T14 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T15 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T16 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T17 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T18 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T19 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T21 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T22 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T23 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T24 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T25 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T26 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T27 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T28 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T29 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T30 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T31 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T32 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T33 | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T34 |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T35 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T36 |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T37 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Matrix

Atomus Research

VALIDATION RESULTS

Tp\yr UAT 11

(continued)

|     | AW | AX | AY | AZ | BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR | BS | BT |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T38 |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T39 |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T40 |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T41 |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T42 |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T43 |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T44 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |
| T45 |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |
| T46 |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |
| T47 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |
| T48 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |    |
| T49 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |    |
| T50 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |
| T51 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |
| T52 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |
| T53 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |
| T54 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |
| T55 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |
| T56 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |
| T57 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T58 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T59 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T60 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T61 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|    | BU | BV | BW | BX | BY | BZ |
|----|----|----|----|----|----|----|
| T1 |    |    |    |    |    |    |
| T2 |    |    |    |    |    |    |
| T3 |    |    |    |    |    |    |
| T4 |    |    |    |    |    |    |
| T5 |    |    |    |    |    |    |
| T6 |    |    |    |    |    |    |

Matrix

Atomus Research

VALIDATION RESULTS

*(continued)*

|     | BU | BV | BW | BX | BY | BZ |
|-----|----|----|----|----|----|----|
| T7  |    |    |    |    |    |    |
| T8  |    |    |    |    |    |    |
| T9  |    |    |    |    |    |    |
| T10 |    |    |    |    |    |    |
| T11 |    |    |    |    |    |    |
| T12 |    |    |    |    |    |    |
| T13 |    |    |    |    |    |    |
| T14 |    |    |    |    |    |    |
| T15 |    |    |    |    |    |    |
| T16 |    |    |    |    |    |    |
| T17 |    |    |    |    |    |    |
| T18 |    |    |    |    |    |    |
| T19 |    |    |    |    |    |    |
| T20 |    |    |    |    |    |    |
| T21 |    |    |    |    |    |    |
| T22 |    |    |    |    |    |    |
| T23 |    |    |    |    |    |    |
| T24 |    |    |    |    |    |    |
| T25 |    |    |    |    |    |    |
| T26 |    |    |    |    |    |    |
| T27 |    |    |    |    |    |    |
| T28 |    |    |    |    |    |    |
| T29 |    |    |    |    |    |    |
| T30 |    |    |    |    |    |    |
| T31 |    |    |    |    |    |    |
| T32 |    |    |    |    |    |    |
| T33 |    |    |    |    |    |    |
| T34 |    |    |    |    |    |    |
| T35 |    |    |    |    |    |    |
| T36 |    |    |    |    |    |    |
| T37 |    |    |    |    |    |    |
| T38 |    |    |    |    |    |    |
| T39 |    |    |    |    |    |    |
| T40 |    |    |    |    |    |    |

*(continued)*

|     | BU | BV | BW | BX | BY | BZ |
|-----|----|----|----|----|----|----|
| T41 |    |    |    |    |    |    |
| T42 |    |    |    |    |    |    |
| T43 |    |    |    |    |    |    |
| T44 |    |    |    |    |    |    |
| T45 |    |    |    |    |    |    |
| T46 |    |    |    |    |    |    |
| T47 |    |    |    |    |    |    |
| T48 |    |    |    |    |    |    |
| T49 |    |    |    |    |    |    |
| T50 |    |    |    |    |    |    |
| T51 |    |    |    |    |    |    |
| T52 |    |    |    |    |    |    |
| T53 |    |    |    |    |    |    |
| T54 |    |    |    |    |    |    |
| T55 |    |    |    |    |    |    |
| T56 |    |    |    |    |    |    |
| T57 | X  |    |    |    |    |    |
| T58 |    | X  | X  |    |    |    |
| T59 |    |    |    | X  |    |    |
| T60 |    |    |    |    | X  |    |
| T61 |    |    |    |    |    | X  |

## Test Cases

NA

This section contains details of each test executed. Checks verifying each test are included as sub-bullets of their associated test.

- Setup: *No prerequisites required*
  - T1: Population data can be specified by the user and treatment variable can be specified
    - \* T1.1: Verify target dataset in table is the same as specified
    - \* T1.2: Verify treatment variable in table is the same as specified
  - T2: Population data subset can be specified on user specified conditions
    - \* T2.1: Population data created matches data subset as specified
  - T3: Manual groups can be specified by combining different subgroups and header N counts will be specified from these groups within the population data
    - \* T3.1: Population groups can be added by combining existing groups
    - \* T3.2: Header N counts of combined groups match the combined total of the groups
  - T4: Analysis data can be specified by the user and treatment variable can be specified for the analysis population
    - \* T4.1: Verify analysis dataset in layer is the same as specified when inherited from table
    - \* T4.2: Verify treatment variable in layer is the same as specified when inherited from table
  - T5: Population data and treatment variable can be specified independent of analysis data and treatment variable
    - \* T5.1: Verify population data can be manually specified if not the same as analysis data
    - \* T5.2: Verify analysis data can be manually specified if not the same as population data
    - \* T5.3: Verify population treatment variable can be manually specified if not the same as analysis treatment variable
    - \* T5.4: Verify analysis treatment variable can be manually specified if not the same as population treatment variable
  - T6: Analysis data subset can be specified on user specified conditions
    - \* T6.1: Analysis data created matches data subset as specified
  - T7: n counts of values within a variable can be produced
    - \* T7.1: Complete data value n counts can be produced within a variable
    - \* T7.2: Distinct data value n counts can be produced within a variable
  - T8: n counts of values within a group of variables can be produced
    - \* T8.1: Complete data value n counts can be produced within a group of variables
    - \* T8.2: Distinct data value n counts can be produced within a group of variables
  - T9: Total n counts can be added and a sort value can be sepecified by the user
    - \* T9.1: Total n count can be added within a layer and sorted using a specified value
  - T10: Missing n count handling can be specified including presentation and denominator handling
    - \* T10.1: Missing n count rows can be added within a layer and sorted using a specified value
    - \* T10.2: Missing values can be excluded from the layer denominator
  - T11: Dummy values can be specified for categories that need to be presented but may not exist within the data and missing values can be set to a user specified string
    - \* T11.1: Values specified by user are presented in the output table and total or missing rows can be added
  - T12: Counts can be produced as n (%)
    - \* T12.1: When specified
    - \* T12.2: Distinct n and % can be displayed in a n (%) fashion and total counts can be added
    - \* T12.3: Distinct and non-distinct n and % can be presented together and total counts can be added
  - T13: When producing n (%), the denominator can be specified using the analysis data
    - \* T13.1: Check denominators created match counts from analysis data
    - \* T13.2: Check % produced use denominators matching counts from analysis data

- T14: When producing n (%), the denominator can be specified using a particular manually specified subset
  - \* T14.1: Check denominators created match counts using specified conditions
  - \* T14.2: Check % produced use denominators matching counts using specified conditions
- T15: When producing n (%), the denominator can be specified using the population data
  - \* T15.1: Check % produced use denominators matching counts from population data
  - \* T15.2: Check denominators created match counts from population data
- T16: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
  - \* T16.1: Check % produced use denominators matching counts from grouping variables
  - \* T16.2: Check added total row matches counts using denom by variables
- T17: Risk difference including confidence interval can be produced based on specified treatment groupings and arguments can be passed through to prop.test
  - \* T17.1: Check that risk difference calculated between groupings is correct
  - \* T17.2: Check that confidence interval calculated between groupings is correct
  - \* T17.3: Arguments passed through to prop.test create the correct output
- T18: Risk difference can be calculated over user specified cols arguments
  - \* T18.1: Risk difference estimate and confidence interval can be computed across values of the treatment variable and cols argument
- T19: Risk difference can be calculated over nested count layers and by variables
  - \* T19.1: Risk difference estimate and confidence interval can be computed across values of the treatment variable and nested count layer
  - \* T19.2: Risk difference estimate and confidence interval can be computed across values of the treatment variable and by variable
  - \* T19.3: Risk difference estimate and confidence interval can be computed across values of the treatment variable, nested count layer and by variable
- T20: The descriptive statistics of n, mean, median, IQR, Q1, Q3, standard deviation, variance, min, max, and missing can be produced based on an input variable
  - \* T20.1: Check the computed statistic of n matches the expected value
  - \* T20.2: Check the computed statistic of mean matches the expected value
  - \* T20.3: Check the computed statistic of median matches the expected value
  - \* T20.4: Check the computed statistic of IQR matches the expected value
  - \* T20.5: Check the computed statistic of Q1 matches the expected value
  - \* T20.6: Check the computed statistic of Q3 matches the expected value
  - \* T20.7: Check the computed statistic of standard deviation matches the expected value
  - \* T20.8: Check the computed statistic of variance matches the expected value
  - \* T20.9: Check the computed statistic of min matches the expected value
  - \* T20.10: Check the computed statistic of max matches the expected value
  - \* T20.11: Check the computed statistic of missing matches the expected value
- T21: Custom descriptive statistics can be produced based on an input variable and a specified formula
  - \* T21.1: Check that the computed statistic value matches the value from the specified formula
- T22: Descriptive statistics can be performed across discrete values within a grouping variable or a group of grouping variables
  - \* T22.1: Check the statistic values match the values from the specified grouping variable
- T23: Multiple statistics can be presented in one line
  - \* T23.1: Check that the output can include multiple statistics on the same line
- T24: Decimal precision and integer length can be specified by the user
  - \* T24.1: The output decimal precision and integer length is the same as the user specified values
- T25: Decimal precision and integer length can be dynamically created from analysis data
  - \* T25.1: The output decimal precision and integer length is the same as the decimal precision and integer length from the target data variable
- T26: Presentation format can be specified by the user including desired non-numeric text and align per user specification

- \* T26.1: The output string is formatted the same as user specification including non-numeric text and alignment
- T27: Descriptive statistic missing values can be set to a user specified string
  - \* T27.1: Missing values can be set to a user specified string
- T28: Shift n counts of values using two variables, a ‘from’ and a ‘to’ variable, can be produced
  - \* T28.1: n counts can be created in a shift manner using a from and to variable
- T29: Shift n counts of values within a variable can be produced
  - \* T29.1: n counts can be created in a shift manner using a from and to variable and a by variable
- T30: Shift n counts of values within a group of variables can be produced
  - \* T30.1: n counts can be created in a shift manner using a from and to variable and multiple by variables
- T31: Dummy values for shift counts can be specified for categories that need to be presented but may not exist within the data
  - \* T31.1: Values specified by user for the shift variables are presented in the output table
  - \* T31.2: Values are sorted using the order in the provided factor
- T32: Shift counts can be produced as n (%)
  - \* T32.1: When specified, both n and % can be displayed in a n (%) fashion for shift layer
- T33: For shift counts when producing n (%), the denominator can be specified using the analysis data
  - \* T33.1: Check % produced use denominators matching counts from analysis data
- T34: For shift counts when producing n (%), the denominator can be specified using a particular manually specified subset
  - \* T34.1: Check % produced use denominators matching counts using specified conditions
- T35: For shift counts when producing n (%), the denominator can be specified using the population data
  - \* T35.1: Check % produced use denominators matching counts from population data
- T36: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
  - \* T36.1: Check % produced use denominators matching counts from grouping variables
- T37: Row labels can be manually specified by the user
  - \* T37.1: Check row labels in output table match user specified values
- T38: Row labels can be nested to put a subgroup within a parent group
  - \* T38.1: Check row labels and nesting in output table match user specified values and nesting
- T39: Summaries can be stacked on top of one another
  - \* T39.1: Check multiple summaries mixed between descriptive statistics and count are created they can be stacked
- T40: Summaries can be sorted based on manual sorting by presentation specified order
  - \* T40.1: Check that output table has correct count sorting variables matching specified order
- T41: Summaries can be sorted based on count based sorting (either ascending or descending) by a specified treatment group
  - \* T41.1: Check that output table has correct count sorting variables for count based sorting
- T42: Summaries can be sorted based on alphabetical sorting based on data values
  - \* T42.1: Check that output table has correct count sorting variables for data values
- T43: Summaries can be sorted based on a numeric version of the target variable if available
  - \* T43.1: Check that output table has correct count sorting variables for the corresponding numeric variable
- T44: Summary by variables will be sorted by a numeric variable if available and then by factor
  - \* T44.1: Check that output table has correct sorting variables for supplied by variables
- T45: Nested layers can be sorted independently using different methods
  - \* T45.1: Check that when different methods are supplied for nested layers they are applied correctly
- T46: Independent layers can be sorted using different methods and stacked using common sorting variables



- \* T46.1: Check that when different methods are supplied for independent layers they are applied correctly
- T47: Count layer default formats can be set at the table level
  - \* T47.1: Check that count layer formats set at the table level are applied to layers created
  - \* T47.2: Check that count layer formats applied at the layer level take precedence over table level formats
- T48: Descriptive statistics layer default formats can be set at the table level
  - \* T48.1: Check that descriptive statistics layer formats set at the table level are applied to layers created
  - \* T48.2: Check that descriptive statistics layer formats applied at the layer level take precedence over table level formats
- T49: Shift layer default formats can be set at the table level
  - \* T49.1: Check that shift layer formats set at the table level are applied to layers created
  - \* T49.2: Check that shift layer formats applied at the layer level take precedence over table level formats
- T50: Option for count layer default formats can be specified by the user
  - \* T50.1: Check that the count layer default formats specified in the option are displayed in the table
- T51: Option for descriptive statistics layer default formats can be specified by the user
  - \* T51.1: Check that the descriptive statistics layer default formats specified in the option are displayed in the table
- T52: Option for shift layer default formats can be specified by the user
  - \* T52.1: Check that the shift layer default formats specified in the option are displayed in the table
- T53: Option for a cap on auto precision can be specified by the user
  - \* T53.1: Check that the cap on auto precision specified by the user is displayed correctly in the table for both integers and decimals
- T54: Option for custom descriptive statistics can be specified by the user for use in the table
  - \* T54.1: Check that custom descriptive statistics set in the options can be used and displayed correctly in the table
- T55: Option for setting scipen internal option can be specified by the user
  - \* T55.1: Check that scientific notation supplied is displayed correctly in the table
- T56: Option for setting quantile algorithm choice can be specified by the user
  - \* T56.1: Check that the quantile algorithm supplied is used in table q1 and q3 calculation
- T57: Column headers can be added to the output object
  - \* T57.1: Check that column headers added match those in the output object
- T58: Row breaks can be added between sections based on grouping variables and row labels can be masked in a hierarchical fashion
  - \* T58.1: Check that a row break is added between each section based on the supplied grouping variables and row labels can be masked in a hierarchical fashion
- T59: A table object is returned in a format that is ready to be cosmetically prepared
  - \* T59.1: Check that the table object can be easily cosmetically prepared
- T60: Count layers can process a cols argument and separate population data passed from the table level along with normal count layer processing
  - \* T60.1: Test that n and % results are accurate when the combination of the cols argument and separate population data are applied
  - \* T60.2: Test that risk difference results are accurate when the combination of the cols argument and separate population data are applied
  - \* T60.3: Test that header N values produced are accurate when the combination of the cols argument and separate population data are applied
- T61: Count layers can process a cols argument, separate population data, and a defined subset passed from the table level along with normal count layer processing
  - \* T61.1: Test that n and % results are accurate when the combination of the cols argument, separate population data, and a defined subset are applied

- \* T61.2: Test that risk difference results are accurate when the combination of the cols argument, separate population data, and a defined subset are applied
- \* T61.3: Test that header N values produced are accurate when the combination of the cols argument, separate population data, and a defined subset are applied

## Test Cases Results

[1] “/home/nathan.kosiba/Tplyr/uat/references/output”

| Check | Results     | Pass/Fail |
|-------|-------------|-----------|
| T1.1  | As expected | Pass      |
| T1.2  | As expected | Pass      |
| T2.1  | As expected | Pass      |
| T3.1  | As expected | Pass      |
| T3.2  | As expected | Pass      |
| T4.1  | As expected | Pass      |
| T4.2  | As expected | Pass      |
| T5.1  | As expected | Pass      |
| T5.2  | As expected | Pass      |
| T5.3  | As expected | Pass      |
| T5.4  | As expected | Pass      |
| T6.1  | As expected | Pass      |
| T7.1  | As expected | Pass      |
| T7.2  | As expected | Pass      |
| T8.1  | As expected | Pass      |
| T8.2  | As expected | Pass      |
| T9.1  | As expected | Pass      |
| T10.1 | As expected | Pass      |
| T11.1 | As expected | Pass      |
| T12.1 | As expected | Pass      |
| T12.2 | As expected | Pass      |
| T12.3 | As expected | Pass      |
| T13.1 | As expected | Pass      |
| T13.2 | As expected | Pass      |
| T14.1 | As expected | Pass      |
| T14.2 | As expected | Pass      |
| T15.1 | As expected | Pass      |
| T15.2 | As expected | Pass      |
| T16.1 | As expected | Pass      |
| T17.1 | As expected | Pass      |
| T17.2 | As expected | Pass      |
| T17.3 | As expected | Pass      |
| T18.1 | As expected | Pass      |
| T19.1 | As expected | Pass      |
| T19.2 | As expected | Pass      |
| T19.3 | As expected | Pass      |
| T20.1 | As expected | Pass      |
| T20.2 | As expected | Pass      |
| T20.3 | As expected | Pass      |
| T20.4 | As expected | Pass      |
| T20.5 | As expected | Pass      |
| T20.6 | As expected | Pass      |

*(continued)*

| Check  | Results     | Pass/Fail |
|--------|-------------|-----------|
| T20.7  | As expected | Pass      |
| T20.8  | As expected | Pass      |
| T20.9  | As expected | Pass      |
| T20.10 | As expected | Pass      |
| T20.11 | As expected | Pass      |
| T21.1  | As expected | Pass      |
| T22.1  | As expected | Pass      |
| T23.1  | As expected | Pass      |
| T24.1  | As expected | Pass      |
| T25.1  | As expected | Pass      |
| T26.1  | As expected | Pass      |
| T27.1  | As expected | Pass      |
| T28.1  | As expected | Pass      |
| T29.1  | As expected | Pass      |
| T30.1  | As expected | Pass      |
| T31.1  | As expected | Pass      |
| T32.1  | As expected | Pass      |
| T33.1  | As expected | Pass      |
| T34.1  | As expected | Pass      |
| T35.1  | As expected | Pass      |
| T36.1  | As expected | Pass      |
| T37.1  | As expected | Pass      |
| T38.1  | As expected | Pass      |
| T39.1  | As expected | Pass      |
| T40.1  | As expected | Pass      |
| T41.1  | As expected | Pass      |
| T42.1  | As expected | Pass      |
| T43.1  | As expected | Pass      |
| T44.1  | As expected | Pass      |
| T45.1  | As expected | Pass      |
| T46.1  | As expected | Pass      |
| T47.1  | As expected | Pass      |
| T47.2  | As expected | Pass      |
| T48.1  | As expected | Pass      |
| T48.2  | As expected | Pass      |
| T49.1  | As expected | Pass      |
| T49.2  | As expected | Pass      |
| T50.1  | As expected | Pass      |
| T51.1  | As expected | Pass      |
| T52.1  | As expected | Pass      |
| T53.1  | As expected | Pass      |
| T54.1  | As expected | Pass      |
| T55.1  | As expected | Pass      |
| T56.1  | As expected | Pass      |
| T57.1  | As expected | Pass      |
| T58.1  | As expected | Pass      |
| T59.1  | As expected | Pass      |
| T60.1  | As expected | Pass      |
| T60.2  | As expected | Pass      |
| T60.3  | As expected | Pass      |

*(continued)*

| Check | Results     | Pass/Fail |
|-------|-------------|-----------|
| T61.1 | As expected | Pass      |
| T61.2 | As expected | Pass      |
| T61.3 | As expected | Pass      |

## System Information

R version 4.0.2 (2020-06-22) Platform: x86\_64-pc-linux-gnu (64-bit) Running under: Ubuntu 18.04.4 LTS

Matrix products: default BLAS: /usr/lib/x86\_64-linux-gnu/openblas/libblas.so.3 LAPACK: /usr/lib/x86\_64-linux-gnu/libopenblas-r0.2.20.so

locale: [1] LC\_CTYPE=C.UTF-8 LC\_NUMERIC=C LC\_TIME=C.UTF-8 LC\_COLLATE=C.UTF-8 LC\_MONETARY=C.UTF-8

[6] LC\_MESSAGES=C.UTF-8 LC\_PAPER=C.UTF-8 LC\_NAME=C LC\_ADDRESS=C LC\_TELEPHONE=C

[11] LC\_MEASUREMENT=C.UTF-8 LC\_IDENTIFICATION=C

attached base packages: [1] stats graphics grDevices utils datasets methods base

other attached packages: [1] rlang\_0.4.8 kableExtra\_1.3.1 knitr\_1.30 shinydashboard\_0.7.1 testthat\_3.0.0 forcats\_0.5.0

[7] stringr\_1.4.0 dplyr\_1.0.2 purrr\_0.3.4 readr\_1.3.1 tidyr\_1.1.2 tibble\_3.0.4

[13] ggplot2\_3.3.2 tidyverse\_1.3.0 Tplyr\_0.2.2 shiny\_1.5.0

loaded via a namespace (and not attached): [1] Rcpp\_1.0.5 lubridate\_1.7.9 pharmaRTF\_0.1.1 rprojroot\_1.3-2 assertthat\_0.2.1 digest\_0.6.27

[7] packrat\_0.5.0 mime\_0.9 R6\_2.5.0 cellranger\_1.1.0 backports\_1.2.0 reprex\_0.3.0

[13] evaluate\_0.14 httr\_1.4.2 pillar\_1.4.6 readxl\_1.3.1 rstudioapi\_0.13 blob\_1.2.1

[19] rmarkdown\_2.5 desc\_1.2.0 webshot\_0.5.2 munsell\_0.5.0 broom\_0.7.0 compiler\_4.0.2

[25] httpuv\_1.5.4 modelr\_0.1.8 xfun\_0.19 pkgconfig\_2.0.3 htmltools\_0.5.0.9002 tidyselect\_1.1.0

[31] viridisLite\_0.3.0 fansi\_0.4.1 crayon\_1.3.4 dbplyr\_1.4.4 withr\_2.3.0 later\_1.1.0.1

[37] waldo\_0.2.3 grid\_4.0.2 jsonlite\_1.7.1 xtable\_1.8-4 gtable\_0.3.0 lifecycle\_0.2.0

[43] DBI\_1.1.0 huxtable\_5.1.1 magrittr\_1.5 scales\_1.1.1 cli\_2.1.0 stringi\_1.5.3

[49] diffobj\_0.3.2 fs\_1.5.0 promises\_1.1.1 xml2\_1.3.2 ellipsis\_0.3.1 generics\_0.0.2

[55] vctrs\_0.3.4 rematch2\_2.1.2 tools\_4.0.2 glue\_1.4.2 hms\_0.5.3 pkgload\_1.1.0

[61] rsconnect\_0.8.16 fastmap\_1.0.1 yaml\_2.2.1 colorspace\_1.4-1 rvest\_0.3.6 haven\_2.3.1

## Manual Check Completion History

| Check | Output File Reviewed | Response | Log                               |
|-------|----------------------|----------|-----------------------------------|
| T59.1 | test_59.rtf          | TRUE     | nathan.kosiba:2020-11-30 17:21:22 |