

Create DM table as csv file

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Create DM sample table as CSV file and other files

This script creates the result and codelist for a simple DM table.

```
knit(input="inst/data-raw/create-qb-IC-dataset.Rmd",
      output="inst/data-raw/create-qb-IC-dataset.md")
```

Get the data and prepare for derivation of summary statistics

```
library(rrdfqbcrnd0)

library(foreign)
library(sqldf)

# xptdirectory<- tempdir()
# fnadsl<- paste(xptdirectory,"/", "adsl", ".xpt",sep="")
# download.file("http://phuse-scripts.googlecode.com/svn/trunk/scriptathon2014/data/adsl.xpt", fnadsl)

fnadsl<- system.file("extdata/sample-xpt", "adsl.xpt", package="rrdfqbcrnd0")
print(fnadsl)
```

[1] “/home/ma/R/x86_64-redhat-linux-gnu-library/3.1/rrdfqbcrnd0/extdata/sample-xpt/adsl.xpt”

```
if (!file.exists(fnadsl)) {
  fnadsl<- file.path(".", "extdata/sample-xpt", "adsl.xpt")
}
if (!file.exists(fnadsl)) {
  stop("File does not exist - ",fnadsl)
}
adsl<- read.xport(fnadsl)
adsl$TRT01A<- as.character(adsl$TRT01A)
adsl$RACE<- as.character(adsl$RACE)
```

```
adsl$SAFFL<- as.character(adsl$SAFFL)
adsl$SEX<- as.character(adsl$SEX)

## SASxport package maps characters and dates etc into more R like data type
## install.packages("SASxport")
## library(SASxport)
## adsl<- as.data.frame(read.xport(fnadsl,as.is=TRUE))
## str(adsl)
```

Create frame for cube from an existing RDF data cube

The code input a turtle file with an RDF data cube. SQL statements for calculating the measurements are derived from the cube, and used to derive the summary statistics. Note: the SQL statements does not show records where the combination of values lead to 0 observations. This is handled below, in a not so clever way. A better approach would be to include the concept of a skeleton in the SQL statements.

```
library(rrdfqbc rnd0)

dataCubeFile<- system.file("extdata/sample-rdf", "DC-DM-sample.TTL", package="rrdfqbc rnd0")
checkCube <- new.rdf(ontology=FALSE) # Initialize
load.rdf(dataCubeFile, format="TURTLE", appendTo= checkCube)
summarize.rdf(checkCube)
```

[1] "Number of triples: 1256"

```
stmtSQL<- GetSQLFromCube(checkCube)

cat(stmtSQL$summStatSQL)
```

```
SELECT a.TRT01A, 'ALL' as RACE, a.SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, 'ALL'
as denominator, 'NULL' as unit, count() as measure from adsl as a group by a.TRT01A, a.SEX, a.SAFFL
UNION SELECT a.TRT01A, 'ALL' as RACE, 'ALL' as SEX, a.SAFFL, 'mean' as procedure, 'WEIGHTBL'
as factor, 'NULL' as denominator, 'KG' as unit, avg(WEIGHTBL) as measure from adsl as a group by
a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, 'ALL' as RACE, 'ALL' as SEX, a.SAFFL, 'max' as
procedure, 'WEIGHTBL' as factor, 'NULL' as denominator, 'KG' as unit, max(WEIGHTBL) as measure
from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, 'ALL' as RACE, 'ALL' as SEX,
a.SAFFL, 'max' as procedure, 'AGE' as factor, 'NULL' as denominator, 'YEARS' as unit, max(AGE) as
measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, 'ALL' as RACE, 'ALL'
as SEX, a.SAFFL, 'median' as procedure, 'WEIGHTBL' as factor, 'NULL' as denominator, 'KG' as unit,
median(WEIGHTBL) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A,
a.RACE, 'ALL' as SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, 'ALL' as denominator, 'NULL'
as unit, count() as measure from adsl as a group by a.TRT01A, a.RACE, a.SAFFL UNION SELECT
a.TRT01A, b.RACE, 'ALL' as SEX, a.SAFFL, 'percent' as procedure, 'proportion' as factor, 'RACE' as
denominator, 'NULL' as unit, 100avg(a.RACE=b.RACE) as measure from adsl as a , (select distinct RACE
from adsl) as b group by a.TRT01A, b.RACE, a.SAFFL UNION SELECT a.TRT01A, 'ALL' as RACE,
'ALL' as SEX, a.SAFFL, 'stdev' as procedure, 'AGE' as factor, 'NULL' as denominator, 'YEARS' as unit,
stdev(AGE) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, 'ALL'
as RACE, 'ALL' as SEX, a.SAFFL, 'min' as procedure, 'AGE' as factor, 'NULL' as denominator, 'YEARS'
as unit, min(AGE) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A,
'ALL' as RACE, b.SEX, a.SAFFL, 'percent' as procedure, 'proportion' as factor, 'SEX' as denominator,
'NULL' as unit, 100avg(a.SEX=b.SEX) as measure from adsl as a , (select distinct SEX from adsl) as b group
by a.TRT01A, b.SEX, a.SAFFL UNION SELECT a.TRT01A, 'ALL' as RACE, 'ALL' as SEX, a.SAFFL,
```

‘min’ as procedure, ‘WEIGHTBL’ as factor, ‘NULL’ as denominator, ‘KG’ as unit, min(WEIGHTBL) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT ‘ALL’ as TRT01A, a.RACE, ‘ALL’ as SEX, a.SAFFL, ‘count’ as procedure, ‘quantity’ as factor, ‘ALL’ as denominator, ‘NULL’ as unit, count() as measure from adsl as a group by a.RACE, a.SAFFL UNION SELECT a.TRT01A, ‘ALL’ as RACE, ‘ALL’ as SEX, a.SAFFL, ‘mean’ as procedure, ‘AGE’ as factor, ‘NULL’ as denominator, ‘YEARS’ as unit, avg(AGE) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT ‘ALL’ as TRT01A, ‘ALL’ as RACE, a.SEX, a.SAFFL, ‘count’ as procedure, ‘quantity’ as factor, ‘ALL’ as denominator, ‘NULL’ as unit, count() as measure from adsl as a group by a.SEX, a.SAFFL UNION SELECT a.TRT01A, ‘ALL’ as RACE, ‘ALL’ as SEX, a.SAFFL, ‘median’ as procedure, ‘AGE’ as factor, ‘NULL’ as denominator, ‘YEARS’ as unit, median(AGE) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, ‘ALL’ as RACE, ‘ALL’ as SEX, a.SAFFL, ‘count’ as procedure, ‘quantity’ as factor, ‘ALL’ as denominator, ‘NULL’ as unit, count(*) as measure from adsl as a group by a.TRT01A, a.SAFFL UNION SELECT a.TRT01A, ‘ALL’ as RACE, ‘ALL’ as SEX, a.SAFFL, ‘stdev’ as procedure, ‘WEIGHTBL’ as factor, ‘NULL’ as denominator, ‘KG’ as unit, stdev(WEIGHTBL) as measure from adsl as a group by a.TRT01A, a.SAFFL

```
adsl.summ.stat.res<- sqldf( stmtSQL$summStatSQL)
names(adsl.summ.stat.res)<- tolower(gsub("(a|b)\\."," ", names(adsl.summ.stat.res)))
```

Store the SQL statements to a file

```
res.text<- stmtSQL$summStatSQL

cr.text<- paste0("create table qbframe ", "(", paste(names(stmtSQL$qbframe), "TEXT", collapse=", "),
in.text<- paste0(
  paste(
    paste0("insert into qbframe ", "(", paste0(names(stmtSQL$qbframe),collapse=", "), ")\\n" ),
    "values\\n",
    paste0( "(", apply(stmtSQL$qbframe,1,function(x) {paste0("'",x,"'", collapse=",")}), ")", collapse="\\n"
  ),";\\n")

se.text<- "select * from qbframe;"

tempfile<- file.path(tempdir(),"temp-code.R")
cat(paste('res.text<- "', res.text,"\\n',collapse=\\n"), file=tempfile)
cat(paste("cr.text<- '", cr.text,"\\n",collapse=\\n"), file=tempfile,append=TRUE)
cat(paste("in.text<- '", in.text,"\\n",collapse=\\n"), file=tempfile,append=TRUE)
cat(paste("se.text<- '", se.text,"\\n",collapse=\\n"), file=tempfile,append=TRUE)
print(tempfile)
```

[1] “/tmp/Rtmpki73Yj/temp-code.R”

Define SQL statements directly

The statements below are inserted from the file generated above.

Work-around: add SELECT statments below corresponding to the desired statistics. Update the .csv file, and re-create the cube. Repeat until done. This is of course not the ideal way; waiting to the formular interface to the cube.

```

res.text<- "
SELECT a.TRTO1A, '_ALL_' as RACE, a.SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'mean' as procedure, 'WEIGHTBL' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'max' as procedure, 'WEIGHTBL' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'max' as procedure, 'AGE' as factor, '_NULL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'median' as procedure, 'WEIGHTBL' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, a.RACE, '_ALL_' as SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, b.RACE, '_ALL_' as SEX, a.SAFFL, 'percent' as procedure, 'proportion' as factor, 'RACE' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'stdev' as procedure, 'AGE' as factor, '_NULL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'min' as procedure, 'AGE' as factor, '_NULL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, b.SEX, a.SAFFL, 'percent' as procedure, 'proportion' as factor, 'SEX' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'min' as procedure, 'WEIGHTBL' as factor, '_ALL_' as
UNION
SELECT '_ALL_' as TRTO1A, a.RACE, '_ALL_' as SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'mean' as procedure, 'AGE' as factor, '_NULL_' as
UNION
SELECT '_ALL_' as TRTO1A, '_ALL_' as RACE, a.SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'median' as procedure, 'AGE' as factor, '_NULL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'count' as procedure, 'quantity' as factor, '_ALL_' as
UNION
SELECT a.TRTO1A, '_ALL_' as RACE, '_ALL_' as SEX, a.SAFFL, 'stdev' as procedure, 'WEIGHTBL' as factor, '_ALL_' as
"

cr.text<- '
create table qbframe (trt01a TEXT, race TEXT, factor TEXT, procedure TEXT, sex TEXT, saffl TEXT, unit TEXT, denominator TEXT)

in.text<- '
insert into qbframe (trt01a,race,factor,procedure,sex,saffl,unit,denominator)
values
("Xanomeline High Dose","AMERICAN INDIAN OR ALASKA NATIVE","proportion","percent","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","AMERICAN INDIAN OR ALASKA NATIVE","proportion","percent","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","BLACK OR AFRICAN AMERICAN","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Placebo","_ALL_","quantity","count","F","Y","_NULL_","_ALL_"),
("_ALL_","WHITE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","_ALL_","AGE","min","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","_ALL_","AGE","stdev","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline Low Dose","_ALL_","proportion","percent","M","Y","_NULL_","SEX"),
("Placebo","_ALL_","AGE","stdev","_ALL_","Y","YEARS","_NULL_"),

```

```

("Xanomeline High Dose","WHITE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","WHITE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline High Dose","_ALL_","AGE","max","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","AMERICAN INDIAN OR ALASKA NATIVE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","BLACK OR AFRICAN AMERICAN","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","AGE","max","_ALL_","Y","YEARS","_NULL_"),
("Placebo","AMERICAN INDIAN OR ALASKA NATIVE","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Placebo","BLACK OR AFRICAN AMERICAN","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Xanomeline Low Dose","_ALL_","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","quantity","count","M","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","proportion","percent","F","Y","_NULL_","SEX"),
("Xanomeline High Dose","_ALL_","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","_ALL_","quantity","count","M","Y","_NULL_","_ALL_"),
("Xanomeline High Dose","_ALL_","proportion","percent","F","Y","_NULL_","SEX"),
("Xanomeline Low Dose","_ALL_","quantity","count","F","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","AGE","mean","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","_ALL_","AGE","median","_ALL_","Y","YEARS","_NULL_"),
("Placebo","_ALL_","AGE","min","_ALL_","Y","YEARS","_NULL_"),
("_ALL_","BLACK OR AFRICAN AMERICAN","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","AGE","median","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline Low Dose","_ALL_","AGE","stdev","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline Low Dose","AMERICAN INDIAN OR ALASKA NATIVE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","BLACK OR AFRICAN AMERICAN","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","_ALL_","AGE","max","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","BLACK OR AFRICAN AMERICAN","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Xanomeline High Dose","WHITE","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Xanomeline Low Dose","WHITE","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("_ALL_","_ALL_","quantity","count","M","Y","_NULL_","_ALL_"),
("Xanomeline High Dose","_ALL_","quantity","count","M","Y","_NULL_","_ALL_"),
("_ALL_","_ALL_","quantity","count","F","Y","_NULL_","_ALL_"),
("Xanomeline High Dose","_ALL_","quantity","count","F","Y","_NULL_","_ALL_"),
("Placebo","_ALL_","proportion","percent","M","Y","_NULL_","SEX"),
("Xanomeline Low Dose","_ALL_","proportion","percent","F","Y","_NULL_","SEX"),
("Xanomeline Low Dose","_ALL_","AGE","mean","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","_ALL_","proportion","percent","M","Y","_NULL_","SEX"),
("Placebo","AMERICAN INDIAN OR ALASKA NATIVE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline High Dose","_ALL_","AGE","mean","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","BLACK OR AFRICAN AMERICAN","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","WHITE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","_ALL_","AGE","median","_ALL_","Y","YEARS","_NULL_"),
("Xanomeline High Dose","_ALL_","AGE","min","_ALL_","Y","YEARS","_NULL_"),
("_ALL_","AMERICAN INDIAN OR ALASKA NATIVE","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Placebo","WHITE","proportion","percent","_ALL_","Y","_NULL_","RACE"),
("Placebo","_ALL_","quantity","count","_ALL_","Y","_NULL_","_ALL_"),
("Xanomeline Low Dose","_ALL_","WEIGHTBL","min","_ALL_","Y","KG","_NULL_"),
("Xanomeline High Dose","_ALL_","WEIGHTBL","stdev","_ALL_","Y","KG","_NULL_"),
("Placebo","_ALL_","WEIGHTBL","stdev","_ALL_","Y","KG","_NULL_"),
("Xanomeline High Dose","_ALL_","WEIGHTBL","max","_ALL_","Y","KG","_NULL_"),
("Placebo","_ALL_","WEIGHTBL","max","_ALL_","Y","KG","_NULL_"),
("Placebo","_ALL_","WEIGHTBL","mean","_ALL_","Y","KG","_NULL_"),
("Xanomeline High Dose","_ALL_","WEIGHTBL","median","_ALL_","Y","KG","_NULL_"),
("Placebo","_ALL_","WEIGHTBL","min","_ALL_","Y","KG","_NULL_"),
("Placebo","_ALL_","WEIGHTBL","median","_ALL_","Y","KG","_NULL_"),

```

```

("Xanomeline Low Dose", "_ALL_", "WEIGHTBL", "stdev", "_ALL_", "Y", "KG", "_NULL_"),
("Xanomeline Low Dose", "_ALL_", "WEIGHTBL", "max", "_ALL_", "Y", "KG", "_NULL_"),
("Xanomeline Low Dose", "_ALL_", "WEIGHTBL", "mean", "_ALL_", "Y", "KG", "_NULL_"),
("Xanomeline High Dose", "_ALL_", "WEIGHTBL", "mean", "_ALL_", "Y", "KG", "_NULL_"),
("Xanomeline Low Dose", "_ALL_", "WEIGHTBL", "median", "_ALL_", "Y", "KG", "_NULL_"),
("Xanomeline High Dose", "_ALL_", "WEIGHTBL", "min", "_ALL_", "Y", "KG", "_NULL_")
;
'
se.text<- '
select * from qbframe;
'

```

Evaluate the SQL code

```

adsl.summ.stat.res<- sqldf( res.text )
# adsl.summ.stat$unit<- "_NULL_"
names(adsl.summ.stat.res)<- tolower(gsub("(a|b)\\.\"", "", names(adsl.summ.stat.res)))

rm(qbframe)
sqldf()

```

```
sqldf(cr.text )
```

NULL

```
sqldf(in.text )
```

NULL

```

qbframe<- sqldf(se.text)
sqldf()

```

NULL

```
# str(qbframe)
```

Combine generated results with the cube frame and write CSV file

Note: the new csv file should be moved manually to the extdata/sample-cfg directory.

```

adsl.summ.stat<- merge(qbframe,adsl.summ.stat.res,by=names(qbframe),all=TRUE)
# adsl.summ.stat<- merge(stmtSQL$qbframe,adsl.summ.stat.res,all=TRUE)
adsl.summ.stat$measure[ is.na(adsl.summ.stat$measure) & adsl.summ.stat$procedure=="count" ]<- 0
adsl.summ.stat

```

trt01a

race

factor

1 *ALL ALL* quantity 2 *ALL ALL* quantity 3 *ALL AMERICAN INDIAN OR ALASKA NATIVE* quantity 4
ALL BLACK OR AFRICAN AMERICAN quantity 5 *ALL WHITE* quantity 6 Placebo *ALL AGE* 7 Placebo
ALL AGE 8 Placebo *ALL AGE* 9 Placebo *ALL AGE* 10 Placebo *ALL AGE* 11 Placebo *ALL* proportion
 12 Placebo *ALL* proportion 13 Placebo *ALL* quantity 14 Placebo *ALL* quantity 15 Placebo *ALL* quantity
 16 Placebo *ALL WEIGHTBL* 17 Placebo *ALL WEIGHTBL* 18 Placebo *ALL WEIGHTBL* 19 Placebo
ALL WEIGHTBL 20 Placebo *ALL WEIGHTBL* 21 Placebo *AMERICAN INDIAN OR ALASKA NATIVE*
 proportion 22 Placebo *AMERICAN INDIAN OR ALASKA NATIVE* quantity 23 Placebo *BLACK OR*
AFRICAN AMERICAN proportion 24 Placebo *BLACK OR AFRICAN AMERICAN* quantity 25 Placebo
WHITE proportion 26 Placebo *WHITE* quantity 27 Xanomeline High Dose *ALL AGE* 28 Xanomeline High
 Dose *ALL AGE* 29 Xanomeline High Dose *ALL AGE* 30 Xanomeline High Dose *ALL AGE* 31 Xanomeline
 High Dose *ALL AGE* 32 Xanomeline High Dose *ALL* proportion 33 Xanomeline High Dose *ALL* proportion
 34 Xanomeline High Dose *ALL* quantity 35 Xanomeline High Dose *ALL* quantity 36 Xanomeline High Dose
ALL quantity 37 Xanomeline High Dose *ALL WEIGHTBL* 38 Xanomeline High Dose *ALL WEIGHTBL* 39
 Xanomeline High Dose *ALL WEIGHTBL* 40 Xanomeline High Dose *ALL WEIGHTBL* 41 Xanomeline High
 Dose *ALL WEIGHTBL* 42 Xanomeline High Dose *AMERICAN INDIAN OR ALASKA NATIVE* proportion
 43 Xanomeline High Dose *AMERICAN INDIAN OR ALASKA NATIVE* quantity 44 Xanomeline High
 Dose *BLACK OR AFRICAN AMERICAN* proportion 45 Xanomeline High Dose *BLACK OR AFRICAN*
AMERICAN quantity 46 Xanomeline High Dose *WHITE* proportion 47 Xanomeline High Dose *WHITE*
 quantity 48 Xanomeline Low Dose *ALL AGE* 49 Xanomeline Low Dose *ALL AGE* 50 Xanomeline Low Dose
ALL AGE 51 Xanomeline Low Dose *ALL AGE* 52 Xanomeline Low Dose *ALL AGE* 53 Xanomeline Low
 Dose *ALL* proportion 54 Xanomeline Low Dose *ALL* proportion 55 Xanomeline Low Dose *ALL* quantity
 56 Xanomeline Low Dose *ALL* quantity 57 Xanomeline Low Dose *ALL* quantity 58 Xanomeline Low Dose
ALL WEIGHTBL 59 Xanomeline Low Dose *ALL WEIGHTBL* 60 Xanomeline Low Dose *ALL WEIGHTBL*
 61 Xanomeline Low Dose *ALL WEIGHTBL* 62 Xanomeline Low Dose *ALL WEIGHTBL* 63 Xanomeline
 Low Dose *AMERICAN INDIAN OR ALASKA NATIVE* proportion 64 Xanomeline Low Dose *AMERICAN*
INDIAN OR ALASKA NATIVE quantity 65 Xanomeline Low Dose *BLACK OR AFRICAN AMERICAN*
 proportion 66 Xanomeline Low Dose *BLACK OR AFRICAN AMERICAN* quantity 67 Xanomeline Low
 Dose *WHITE* proportion 68 Xanomeline Low Dose *WHITE* quantity procedure sex saffl unit denominator
 measure 1 count F Y *NULL ALL* 143.000000 2 count M Y *NULL ALL* 111.000000 3 count *ALL Y NULL*
ALL 1.000000 4 count *ALL Y NULL ALL* 23.000000 5 count *ALL Y NULL ALL* 230.000000 6 max *ALL*
Y YEARS NULL 89.000000 7 mean *ALL Y YEARS NULL* 75.209302 8 median *ALL Y YEARS NULL*
 76.000000 9 min *ALL Y YEARS NULL* 52.000000 10 stdev *ALL Y YEARS NULL* 8.590167 11 percent F Y
NULL SEX 61.627907 12 percent M Y *NULL SEX* 38.372093 13 count *ALL Y NULL ALL* 86.000000 14
 count F Y *NULL ALL* 53.000000 15 count M Y *NULL ALL* 33.000000 16 max *ALL Y KG NULL* 86.200000
 17 mean *ALL Y KG NULL* 62.759302 18 median *ALL Y KG NULL* 60.550000 19 min *ALL Y KG NULL*
 34.000000 20 stdev *ALL Y KG NULL* 12.771544 21 percent *ALL Y NULL RACE* 0.000000 22 count *ALL Y*
NULL ALL 0.000000 23 percent *ALL Y NULL RACE* 9.302326 24 count *ALL Y NULL ALL* 8.000000 25
 percent *ALL Y NULL RACE* 90.697674 26 count *ALL Y NULL ALL* 78.000000 27 max *ALL Y YEARS*
NULL 88.000000 28 mean *ALL Y YEARS NULL* 74.380952 29 median *ALL Y YEARS NULL* 76.000000 30
 min *ALL Y YEARS NULL* 56.000000 31 stdev *ALL Y YEARS NULL* 7.886094 32 percent F Y *NULL SEX*
 47.619048 33 percent M Y *NULL SEX* 52.380952 34 count *ALL Y NULL ALL* 84.000000 35 count F Y *NULL*
ALL 40.000000 36 count M Y *NULL ALL* 44.000000 37 max *ALL Y KG NULL* 108.000000 38 mean *ALL Y*
KG NULL 70.004762 39 median *ALL Y KG NULL* 69.200000 40 min *ALL Y KG NULL* 41.700000 41 stdev
ALL Y KG NULL 14.653433 42 percent *ALL Y NULL RACE* 1.190476 43 count *ALL Y NULL ALL* 1.000000
 44 percent *ALL Y NULL RACE* 10.714286 45 count *ALL Y NULL ALL* 9.000000 46 percent *ALL Y NULL*
RACE 88.095238 47 count *ALL Y NULL ALL* 74.000000 48 max *ALL Y YEARS NULL* 88.000000 49 mean
ALL Y YEARS NULL 75.666667 50 median *ALL Y YEARS NULL* 77.500000 51 min *ALL Y YEARS NULL*
 51.000000 52 stdev *ALL Y YEARS NULL* 8.286051 53 percent F Y *NULL SEX* 59.523810 54 percent M Y
NULL SEX 40.476190 55 count *ALL Y NULL ALL* 84.000000 56 count F Y *NULL ALL* 50.000000 57 count
 M Y *NULL ALL* 34.000000 58 max *ALL Y KG NULL* 106.100000 59 mean *ALL Y KG NULL* 67.279518
 60 median *ALL Y KG NULL* 64.900000 61 min *ALL Y KG NULL* 45.400000 62 stdev *ALL Y KG NULL*
 14.123599 63 percent *ALL Y NULL RACE* 0.000000 64 count *ALL Y NULL ALL* 0.000000 65 percent *ALL*
Y NULL RACE 7.142857 66 count *ALL Y NULL ALL* 6.000000 67 percent *ALL Y NULL RACE* 92.857143
 68 count *ALL Y NULL ALL* 78.000000


```
## dmtableFile<- system.file("extdata/sample-cfg", "dm.AR.csv", package="rrdfqbc rnd0")
dmtableFile<- file.path(tempdir(), "temp-dm.AR.csv")

write.csv(adsl.summ.stat, file=dmtableFile, row.names=FALSE)
```

Compare results from SQL with the input / previously generated

```
colorder<- c( "saffl", "trt01a", "race", "sex", "procedure", "factor", "denominator", "unit", "measure")

# dmtablecompareFile<- system.file("extdata/sample-cfg", "dm-prev.AR.csv", package="rrdfqbc rnd0")
dmtablecompareFile<- system.file("extdata/sample-cfg", "dm.AR.csv", package="rrdfqbc rnd0")

dmtable<- read.csv(dmtablecompareFile, stringsAsFactors=FALSE)
names(dmtable)<-tolower(names(dmtable))
## str(dmtable)
Sort <- function(DF) DF[do.call(order, DF),]
fromCSV.for.all.equal<- Sort(dmtable[,colorder])
## str(adsl.summ.stat)
xadsl.summ.stat<- adsl.summ.stat[,colorder]
fromSQL.for.all.equal<- Sort(xadsl.summ.stat[, intersect(names(fromCSV.for.all.equal), names(xadsl.summ.stat))])
all.equal(fromCSV.for.all.equal, fromSQL.for.all.equal, check.attributes = FALSE)
```

[1] TRUE

```
compare<-merge(fromSQL.for.all.equal, fromCSV.for.all.equal, by=setdiff(colorder, "measure"), all=TRUE)
## simple criteria - should also include relative difference
compare$isequal<- abs(compare$measure.x - compare$measure.y ) < 1e-6
compare
```

saffl trt01a race sex 1 Y ALL ALL F 2 Y ALL ALL M 3 Y ALL AMERICAN INDIAN OR ALASKA NATIVE ALL 4 Y ALL BLACK OR AFRICAN AMERICAN ALL 5 Y ALL WHITE ALL 6 Y Placebo ALL ALL 7 Y Placebo ALL ALL 8 Y Placebo ALL ALL 9 Y Placebo ALL ALL 10 Y Placebo ALL ALL 11 Y Placebo ALL ALL 12 Y Placebo ALL ALL 13 Y Placebo ALL ALL 14 Y Placebo ALL ALL 15 Y Placebo ALL ALL 16 Y Placebo ALL ALL 17 Y Placebo ALL F 18 Y Placebo ALL F 19 Y Placebo ALL M 20 Y Placebo ALL M 21 Y Placebo AMERICAN INDIAN OR ALASKA NATIVE ALL 22 Y Placebo AMERICAN INDIAN OR ALASKA NATIVE ALL 23 Y Placebo BLACK OR AFRICAN AMERICAN ALL 24 Y Placebo BLACK OR AFRICAN AMERICAN ALL 25 Y Placebo WHITE ALL 26 Y Placebo WHITE ALL 27 Y Xanomeline High Dose ALL ALL 28 Y Xanomeline High Dose ALL ALL 29 Y Xanomeline High Dose ALL ALL 30 Y Xanomeline High Dose ALL ALL 31 Y Xanomeline High Dose ALL ALL 32 Y Xanomeline High Dose ALL ALL 33 Y Xanomeline High Dose ALL ALL 34 Y Xanomeline High Dose ALL ALL 35 Y Xanomeline High Dose ALL ALL 36 Y Xanomeline High Dose ALL ALL 37 Y Xanomeline High Dose ALL ALL 38 Y Xanomeline High Dose ALL F 39 Y Xanomeline High Dose ALL F 40 Y Xanomeline High Dose ALL M 41 Y Xanomeline High Dose ALL M 42 Y Xanomeline High Dose AMERICAN INDIAN OR ALASKA NATIVE ALL 43 Y Xanomeline High Dose AMERICAN INDIAN OR ALASKA NATIVE ALL 44 Y Xanomeline High Dose BLACK OR AFRICAN AMERICAN ALL 45 Y Xanomeline High Dose BLACK OR AFRICAN AMERICAN ALL 46 Y Xanomeline High Dose WHITE ALL 47 Y Xanomeline High Dose WHITE ALL 48 Y Xanomeline Low Dose ALL ALL 49 Y Xanomeline Low Dose ALL ALL 50 Y Xanomeline Low Dose ALL ALL 51 Y Xanomeline Low Dose ALL ALL 52 Y Xanomeline Low Dose ALL ALL 53 Y Xanomeline Low Dose ALL ALL 54 Y Xanomeline Low Dose ALL ALL 55 Y Xanomeline Low Dose ALL ALL 56 Y Xanomeline Low Dose ALL ALL 57 Y Xanomeline Low Dose ALL ALL 58 Y Xanomeline Low Dose ALL ALL 59 Y Xanomeline Low Dose ALL F 60 Y Xanomeline Low Dose ALL F 61 Y Xanomeline

Low Dose *ALL* M 62 Y Xanomeline Low Dose *ALL* M 63 Y Xanomeline Low Dose AMERICAN INDIAN
 OR ALASKA NATIVE *ALL* 64 Y Xanomeline Low Dose AMERICAN INDIAN OR ALASKA NATIVE
ALL 65 Y Xanomeline Low Dose BLACK OR AFRICAN AMERICAN *ALL* 66 Y Xanomeline Low Dose
 BLACK OR AFRICAN AMERICAN *ALL* 67 Y Xanomeline Low Dose WHITE *ALL* 68 Y Xanomeline Low
 Dose WHITE *ALL* procedure factor denominator unit measure.x measure.y isequal 1 count quantity *ALL*
NULL 143.000000 143.000000 TRUE 2 count quantity *ALL NULL* 111.000000 111.000000 TRUE 3 count
 quantity *ALL NULL* 1.000000 1.000000 TRUE 4 count quantity *ALL NULL* 23.000000 23.000000 TRUE 5
 count quantity *ALL NULL* 230.000000 230.000000 TRUE 6 count quantity *ALL NULL* 86.000000 86.000000
 TRUE 7 max AGE *NULL* YEARS 89.000000 89.000000 TRUE 8 max WEIGHTBL *NULL* KG 86.200000
 86.200000 TRUE 9 mean AGE *NULL* YEARS 75.209302 75.209302 TRUE 10 mean WEIGHTBL *NULL*
 KG 62.759302 62.759302 TRUE 11 median AGE *NULL* YEARS 76.000000 76.000000 TRUE 12 median
 WEIGHTBL *NULL* KG 60.550000 60.550000 TRUE 13 min AGE *NULL* YEARS 52.000000 52.000000 TRUE
 14 min WEIGHTBL *NULL* KG 34.000000 34.000000 TRUE 15 stdev AGE *NULL* YEARS 8.590167 8.590167
 TRUE 16 stdev WEIGHTBL *NULL* KG 12.771544 12.771544 TRUE 17 count quantity *ALL NULL* 53.000000
 53.000000 TRUE 18 percent proportion SEX *NULL* 61.627907 61.627907 TRUE 19 count quantity *ALL NULL*
 33.000000 33.000000 TRUE 20 percent proportion SEX *NULL* 38.372093 38.372093 TRUE 21 count quantity
ALL NULL 0.000000 0.000000 TRUE 22 percent proportion RACE *NULL* 0.000000 0.000000 TRUE 23 count
 quantity *ALL NULL* 8.000000 8.000000 TRUE 24 percent proportion RACE *NULL* 9.302326 9.302326 TRUE
 25 count quantity *ALL NULL* 78.000000 78.000000 TRUE 26 percent proportion RACE *NULL* 90.697674
 90.697674 TRUE 27 count quantity *ALL NULL* 84.000000 84.000000 TRUE 28 max AGE *NULL* YEARS
 88.000000 88.000000 TRUE 29 max WEIGHTBL *NULL* KG 108.000000 108.000000 TRUE 30 mean AGE
NULL YEARS 74.380952 74.380952 TRUE 31 mean WEIGHTBL *NULL* KG 70.004762 70.004762 TRUE
 32 median AGE *NULL* YEARS 76.000000 76.000000 TRUE 33 median WEIGHTBL *NULL* KG 69.200000
 69.200000 TRUE 34 min AGE *NULL* YEARS 56.000000 56.000000 TRUE 35 min WEIGHTBL *NULL* KG
 41.700000 41.700000 TRUE 36 stdev AGE *NULL* YEARS 7.886094 7.886094 TRUE 37 stdev WEIGHTBL
NULL KG 14.653433 14.653433 TRUE 38 count quantity *ALL NULL* 40.000000 40.000000 TRUE 39 percent
 proportion SEX *NULL* 47.619048 47.619048 TRUE 40 count quantity *ALL NULL* 44.000000 44.000000
 TRUE 41 percent proportion SEX *NULL* 52.380952 52.380952 TRUE 42 count quantity *ALL NULL* 1.000000
 1.000000 TRUE 43 percent proportion RACE *NULL* 1.190476 1.190476 TRUE 44 count quantity *ALL NULL*
 9.000000 9.000000 TRUE 45 percent proportion RACE *NULL* 10.714286 10.714286 TRUE 46 count quantity
ALL NULL 74.000000 74.000000 TRUE 47 percent proportion RACE *NULL* 88.095238 88.095238 TRUE 48
 count quantity *ALL NULL* 84.000000 84.000000 TRUE 49 max AGE *NULL* YEARS 88.000000 88.000000
 TRUE 50 max WEIGHTBL *NULL* KG 106.100000 106.100000 TRUE 51 mean AGE *NULL* YEARS 75.666667
 75.666667 TRUE 52 mean WEIGHTBL *NULL* KG 67.279518 67.279518 TRUE 53 median AGE *NULL*
 YEARS 77.500000 77.500000 TRUE 54 median WEIGHTBL *NULL* KG 64.900000 64.900000 TRUE 55
 min AGE *NULL* YEARS 51.000000 51.000000 TRUE 56 min WEIGHTBL *NULL* KG 45.400000 45.400000
 TRUE 57 stdev AGE *NULL* YEARS 8.286051 8.286051 TRUE 58 stdev WEIGHTBL *NULL* KG 14.123599
 14.123599 TRUE 59 count quantity *ALL NULL* 50.000000 50.000000 TRUE 60 percent proportion SEX *NULL*
 59.523810 59.523810 TRUE 61 count quantity *ALL NULL* 34.000000 34.000000 TRUE 62 percent proportion
 SEX *NULL* 40.476190 40.476190 TRUE 63 count quantity *ALL NULL* 0.000000 0.000000 TRUE 64 percent
 proportion RACE *NULL* 0.000000 0.000000 TRUE 65 count quantity *ALL NULL* 6.000000 6.000000 TRUE
 66 percent proportion RACE *NULL* 7.142857 7.142857 TRUE 67 count quantity *ALL NULL* 78.000000
 78.000000 TRUE 68 percent proportion RACE *NULL* 92.857143 92.857143 TRUE