Hospital Statistics on Outcomes, rank and and type of hospitals

|  |
| --- |
| best <- function(state, outcome) { |
|  |

|  |
| --- |
| ## Read outcome data |
|  |

|  |
| --- |
| ## Check that state and outcome are valid |
|  |

|  |
| --- |
| ## Return hospital name in that state with lowest 30-day death |
|  |

|  |
| --- |
| ## rate |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| source("sortHospitalsByOutcome.R") |
|  |

|  |
| --- |
| head(sortHospitalsByOutcome(state, outcome), 1) |
|  |

|  |
| --- |
| } |

[**outcomeCol.R**](https://gist.github.com/kfeoktistoff/cc127819122f404156f9#file-outcomecol-r)

|  |
| --- |
|  |
| outcomeCol <- function(outcome) { | |
|  | |

|  |
| --- |
| if (outcome == "heart attack") { |
|  |

|  |
| --- |
| outcome <- "Hospital.30.Day.Death..Mortality..Rates.from.Heart.Attack" |
|  |

|  |
| --- |
| } else if (outcome == "heart failure") { |
|  |

|  |
| --- |
| outcome <- "Hospital.30.Day.Death..Mortality..Rates.from.Heart.Failure" |
|  |

|  |
| --- |
| } else if (outcome == "pneumonia") { |
|  |

|  |
| --- |
| outcome <- "Hospital.30.Day.Death..Mortality..Rates.from.Pneumonia" |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| else { |
|  |

|  |
| --- |
| stop("invalid outcome") |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| } |

[**rankall.R**](https://gist.github.com/kfeoktistoff/cc127819122f404156f9#file-rankall-r)

|  |
| --- |
|  |
| rankall <- function(outcome, num="best") { | |
|  | |

|  |
| --- |
| ## Read outcome data |
|  |

|  |
| --- |
| ## Check that state and outcome are valid |
|  |

|  |
| --- |
| ## For each state, find the hospital of the given rank |
|  |

|  |
| --- |
| ## Return a data frame with the hospital names and the |
|  |

|  |
| --- |
| ## (abbreviated) state name |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| source("outcomeCol.R") |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| outcome <- outcomeCol(outcome) |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| data <- read.csv("data/outcome-of-care-measures.csv", colClasses="character") |
|  |

|  |
| --- |
| data[,outcome] <- suppressWarnings(as.numeric(data[,outcome])) |
|  |

|  |
| --- |
| data <- data[order(data$"State", data[outcome], data$"Hospital.Name", na.last=NA),] |
|  |

|  |
| --- |
| data <- data[!is.na(outcome)] |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| l <- split(data[,c("Hospital.Name")], data$State) |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| rankHospitals <- function(x, num) { |
|  |

|  |
| --- |
| if (num=="best") { |
|  |

|  |
| --- |
| head(x, 1) |
|  |

|  |
| --- |
| } else if (num=="worst") { |
|  |

|  |
| --- |
| tail(x, 1) |
|  |

|  |
| --- |
| } else { |
|  |

|  |
| --- |
| x[num] |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| result <- lapply(l, rankHospitals, num) |
|  |

|  |
| --- |
| data.frame(hospital = unlist(result), state = names(result), row.names = names(result)) |
|  |

|  |
| --- |
| } |

[**rankhospital.R**](https://gist.github.com/kfeoktistoff/cc127819122f404156f9#file-rankhospital-r)

|  |
| --- |
|  |
| rankhospital <- function(state, outcome, num = "best") { | |
|  | |

|  |
| --- |
| ## Read outcome data |
|  |

|  |
| --- |
| ## Check that state and outcome are valid |
|  |

|  |
| --- |
| ## Return hospital name in that state with the given rank |
|  |

|  |
| --- |
| ## 30-day death rate |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| source("best.R") |
|  |

|  |
| --- |
| source("sortHospitalsByOutcome.R") |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| if (num=="best") { |
|  |

|  |
| --- |
| best(state, outcome) |
|  |

|  |
| --- |
| } else if (num=="worst") { |
|  |

|  |
| --- |
| tail(sortHospitalsByOutcome(state, outcome), 1) |
|  |

|  |
| --- |
| } else { |
|  |

|  |
| --- |
| sortHospitalsByOutcome(state, outcome)[num] |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| } |

[**sortHospitalsByOutcome.R**](https://gist.github.com/kfeoktistoff/cc127819122f404156f9#file-sorthospitalsbyoutcome-r)

|  |
| --- |
|  |
| sortHospitalsByOutcome <- function(state, outcome) { | |
|  | |

|  |
| --- |
| source("outcomeCol.R") |
|  |

|  |
| --- |
| outcome <- outcomeCol(outcome) |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| data <- read.csv("data/outcome-of-care-measures.csv", stringsAsFactors=FALSE) |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| if (!state %in% data$State) { |
|  |

|  |
| --- |
| stop("invalid state") |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| data <- data[data$State==state,] |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| data[,outcome] <- suppressWarnings(as.numeric(data[,outcome])) |
|  |

|  |
| --- |
| data <- data[order(data[outcome], data$"Hospital.Name"),] |
|  |

|  |
| --- |
| as.character(data$"Hospital.Name"[!is.na(data[outcome])]) |
|  |

|  |
| --- |
| } |

[](https://gist.github.com/Cosmin11)

[**Cosmin11**](https://gist.github.com/Cosmin11) commented [on 21 Mar 2015](https://gist.github.com/kfeoktistoff/cc127819122f404156f9#gistcomment-1417623)

best <- function(state, outcome ) {

#Read outcome data----------------------------------------  
my\_data= read.csv("outcome-of-care-measures.csv",colClasses = "character")

#ERROR MSG for Outcomes-----------------------------------  
  
if (outcome == "heart attack"){

my\_outcome = 11

} else if (outcome == "heart failure"){

my\_outcome = 17

}else if (outcome == "pneumonia"){

my\_outcome = 23

} else {

stop ("invalid outcome")

}

#ERROR MSG for State--------------------------------------   
my\_state = as.character(state)   
my\_states =as.vector(unique(my\_data$State))

if (any(my\_state == my\_states,na.rm = TRUE)){

}else{

stop("invalid state")

}

#Create Data Frame with Hosp., State, H. Attack, H. Failure & Pneumonia-----   
my\_sample<-my\_data[which(my\_data[,7]==my\_state),c(2,7,my\_outcome)]

#Replace 'Not Available with NA---------------------------------------------   
my\_sample\_without\_NA<-my\_sample[which(my\_sample[,3]!="Not Available"),]

#Find minimum value of the Outcome--------------------------------------------   
my\_minimum<-min(as.numeric(my\_sample\_without\_NA[,3]))

#Display all hospitals with the minimum dead rate-----------------------------   
my\_result<-my\_sample\_without\_NA[which(as.numeric(my\_sample\_without\_NA[,3])==my\_minimum),]

#Display result in Alphabetical ordered------------------------------------------   
my\_ordered\_result<-my\_result[order(my\_result[,1]),]

#Display first value from the result vector-------------------------------------   
my\_final\_result<-as.vector(head(my\_ordered\_result[,1],1))

my\_final\_result

}