Sensitivity Analysis

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0. Setup

Reading packages

```r
library(readxl)
library(ggplot2)
library(data.table)
library(Hmisc)
```

```
## Loading required package: lattice

## Loading required package: survival

## Loading required package: Formula

##
## Attaching package: 'Hmisc'

## The following objects are masked from 'package:base':
##
##     format.pval, units
```

```r
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:Hmisc':
##
##     src, summarize

## The following objects are masked from 'package:data.table':
##
##     between, first, last

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(tidyr)
library(stringr)
library(binom)
library(gridExtra)
```

```
##
## Attaching package: 'gridExtra'

## The following object is masked from 'package:dplyr':
##
##     combine
```

```r
library(grid)
```

Creating file paths

```r
if(Sys.info()["user"]=="JVARGH7"){
  path_ic_documentation <- "C:/code/support/interstitial_cystitis/documentation"
  path_ic_data <- "C:/Cloud/OneDrive - Emory University/Papers/Interstitial Cystitis/data"
  path_ic_save <- "C:/Cloud/OneDrive - Emory University/Papers/Interstitial Cystitis/working"
}
```

1. Data Cleaning

Reading the data into R

```r
ic_sensitivity <- readxl::read_xlsx(paste0(path_ic_data,"/De-identified covariates data_20190102.xlsx"))
```

```r
colnames(ic_sensitivity) <- c("id","ic_list","cases",
                  "age_last_visit","gender","race","smoking",
                  "elmiron","hydroxyzine","tca","gabapentin","hydroxychloroquine",
                  "cyclobenzaprine","methenamine","phenazopyridine","oxybutynin")
ic_sensitivity <-  ic_sensitivity %>% filter(!is.na(id))
```

```r
ic_sensitivity <- ic_sensitivity %>% filter(!is.na(ic_list))
```

Labeling different columns

```r
ic_sensitivity$cases <- as.factor(ic_sensitivity$cases)
levels(ic_sensitivity$cases) <- c("1 Definite","2 Possibly", "3 Not", "4 No images")
table(ic_sensitivity$cases,useNA = "always")
```

```
##
##  1 Definite  2 Possibly       3 Not 4 No images        <NA>
##           3           4          32         126           0
```

```r
ic_sensitivity$gender <- as.factor(ic_sensitivity$gender)
levels(ic_sensitivity$gender) <- c("1 Female", "2 Male")
table(ic_sensitivity$gender, useNA= "always")
```

```
##
## 1 Female   2 Male     <NA>
##      148       17        0
```

```
ic_sensitivity$race <- as.factor(ic_sensitivity$race)
levels(ic_sensitivity$race) <- c("1 White","2 Black", "3 Other")
table(ic_sensitivity$race,useNA = "always")
```

```
##
## 1 White 2 Black 3 Other    <NA>
##     115      39      11       0
```

```
ic_sensitivity$smoking <- as.factor(ic_sensitivity$smoking)
levels(ic_sensitivity$smoking) <- c("1 Never", "2 Current", "3 Former")
table(ic_sensitivity$smoking,useNA = "always")
```

```
##
##   1 Never 2 Current  3 Former      <NA>
##       118         4        35         8
```

```
ic_sensitivity$elmiron <- with(ic_sensitivity,ifelse(!is.na(elmiron),1,0))
ic_sensitivity$hydroxyzine <- with(ic_sensitivity,ifelse(!is.na(hydroxyzine),1,0))
ic_sensitivity$tca <- with(ic_sensitivity,ifelse(!is.na(tca),1,0))
ic_sensitivity$gabapentin <- with(ic_sensitivity,ifelse(!is.na(gabapentin),1,0))
ic_sensitivity$hydroxychloroquine <- with(ic_sensitivity,ifelse(!is.na(hydroxychloroquine),1,0))
ic_sensitivity$cyclobenzaprine <- with(ic_sensitivity,ifelse(!is.na(cyclobenzaprine),1,0))
ic_sensitivity$methenamine <- with(ic_sensitivity,ifelse(!is.na(methenamine),1,0))
ic_sensitivity$phenazopyridine <- with(ic_sensitivity,ifelse(!is.na(phenazopyridine),1,0))
ic_sensitivity$oxybutynin <- with(ic_sensitivity,ifelse(!is.na(oxybutynin),1,0))

ic_sensitivity <- ic_sensitivity %>% mutate_at(c("elmiron","hydroxyzine",
                         "tca","gabapentin","hydroxychloroquine",
                         "cyclobenzaprine","methenamine",
                         "phenazopyridine","oxybutynin"),
                       funs(factor(.,labels=c("no","yes"))))
```

Generating Summary Statistics: The variable ID has been ignored.

```
describe(ic_sensitivity %>% select(-id,-ic_list))
```

```
## ic_sensitivity %>% select(-id, -ic_list)
##
##  14  Variables      165  Observations
## ---------------------------------------------------------------------------
## cases
##        n  missing distinct
##      165        0        4
##
## Value       1 Definite  2 Possibly       3 Not 4 No images
## Frequency            3           4          32         126
## Proportion       0.018       0.024       0.194       0.764
```

```
## ---------------------------------------------------------------------------
## age_last_visit
##        n  missing distinct     Info     Mean      Gmd      .05      .10
##      165        0       59    0.999    61.47    17.79     36.0     39.4
##      .25      .50      .75      .90      .95
##     50.0     64.0     73.0     80.0     85.6
##
## lowest : 24 25 28 29 31, highest: 86 87 88 89 90
## ---------------------------------------------------------------------------
## gender
##        n  missing distinct
##      165        0        2
##
## Value      1 Female   2 Male
## Frequency       148       17
## Proportion    0.897    0.103
## ---------------------------------------------------------------------------
## race
##        n  missing distinct
##      165        0        3
##
## Value      1 White 2 Black 3 Other
## Frequency      115      39      11
## Proportion   0.697   0.236   0.067
## ---------------------------------------------------------------------------
## smoking
##        n  missing distinct
##      157        8        3
##
## Value        1 Never 2 Current  3 Former
## Frequency        118         4        35
## Proportion     0.752     0.025     0.223
## ---------------------------------------------------------------------------
## elmiron
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    125    40
## Proportion 0.758 0.242
## ---------------------------------------------------------------------------
## hydroxyzine
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    126    39
## Proportion 0.764 0.236
## ---------------------------------------------------------------------------
## tca
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
```

```
## Frequency    117    48
## Proportion 0.709 0.291
## ---------------------------------------------------------------------------
## gabapentin
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    100    65
## Proportion 0.606 0.394
## ---------------------------------------------------------------------------
## hydroxychloroquine
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    156     9
## Proportion 0.945 0.055
## ---------------------------------------------------------------------------
## cyclobenzaprine
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    124    41
## Proportion 0.752 0.248
## ---------------------------------------------------------------------------
## methenamine
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    131    34
## Proportion 0.794 0.206
## ---------------------------------------------------------------------------
## phenazopyridine
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    116    49
## Proportion 0.703 0.297
## ---------------------------------------------------------------------------
## oxybutynin
##        n  missing distinct
##      165        0        2
##
## Value         no   yes
## Frequency    140    25
## Proportion 0.848 0.152
## ---------------------------------------------------------------------------
```

2. 1,2 vs 3,4

A. Hypothesis Tests

```
ic_sensitivity$outcome <- with(ic_sensitivity, as.factor(ifelse(cases %in% c("1 Definite", "2 Possibly")
table(ic_sensitivity$outcome,useNA="always")
```

```
##
##   no  yes <NA>
##  158    7    0
```

Summary for Cases (Outcome = Yes)

```
describe(ic_sensitivity %>% filter(outcome=="yes") %>% select(-id,-ic_list))
```

```
## ic_sensitivity %>% filter(outcome == "yes") %>% select(-id, -ic_list)
##
##  15  Variables      7  Observations
## ---------------------------------------------------------------------------
## cases
##        n  missing distinct
##        7        0        2
##
## Value      1 Definite 2 Possibly
## Frequency           3          4
## Proportion      0.429      0.571
## ---------------------------------------------------------------------------
## age_last_visit
##        n  missing distinct     Info     Mean      Gmd
##        7        0        6    0.982    66.71    12.57
##
## Value         53    61    63    65    75    87
## Frequency      1     1     2     1     1     1
## Proportion 0.143 0.143 0.286 0.143 0.143 0.143
## ---------------------------------------------------------------------------
## gender
##        n  missing distinct
##        7        0        2
##
## Value      1 Female   2 Male
## Frequency         6        1
## Proportion    0.857    0.143
## ---------------------------------------------------------------------------
## race
##        n  missing distinct
##        7        0        3
##
## Value      1 White 2 Black 3 Other
## Frequency        5       1       1
## Proportion   0.714   0.143   0.143
## ---------------------------------------------------------------------------
## smoking
```

```
##        n  missing distinct
##        7        0        2
##
## Value       1 Never 3 Former
## Frequency          6        1
## Proportion    0.857    0.143
## ---------------------------------------------------------------------------
## elmiron
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      3     4
## Proportion 0.429 0.571
## ---------------------------------------------------------------------------
## hydroxyzine
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      4     3
## Proportion 0.571 0.429
## ---------------------------------------------------------------------------
## tca
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      5     2
## Proportion 0.714 0.286
## ---------------------------------------------------------------------------
## gabapentin
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      4     3
## Proportion 0.571 0.429
## ---------------------------------------------------------------------------
## hydroxychloroquine
##        n  missing distinct    value
##        7        0        1       no
##
## Value      no
## Frequency   7
## Proportion  1
## ---------------------------------------------------------------------------
## cyclobenzaprine
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      5     2
## Proportion 0.714 0.286
```

```
## --------------------------------------------------------------------------------
## methenamine
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      6     1
## Proportion 0.857 0.143
## --------------------------------------------------------------------------------
## phenazopyridine
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      4     3
## Proportion 0.571 0.429
## --------------------------------------------------------------------------------
## oxybutynin
##        n  missing distinct
##        7        0        2
##
## Value         no   yes
## Frequency      5     2
## Proportion 0.714 0.286
## --------------------------------------------------------------------------------
## outcome
##        n  missing distinct    value
##        7        0        1      yes
##
## Value      yes
## Frequency    7
## Proportion   1
## --------------------------------------------------------------------------------
```

Summary for Non-cases (Outcome = No)

```
describe(ic_sensitivity %>% filter(outcome=="no") %>% select(-id,-ic_list))
```

```
## ic_sensitivity %>% filter(outcome == "no") %>% select(-id, -ic_list)
##
##  15  Variables      158  Observations
## --------------------------------------------------------------------------------
## cases
##        n  missing distinct
##      158        0        2
##
## Value            3 Not 4 No images
## Frequency           32         126
## Proportion       0.203       0.797
## --------------------------------------------------------------------------------
## age_last_visit
##        n  missing distinct     Info     Mean      Gmd      .05      .10
##      158        0       58    0.999    61.23    17.99     35.7     39.0
```

```
##      .25      .50      .75      .90      .95
##     50.0     64.0     73.0     80.0     84.3
##
## lowest : 24 25 28 29 31, highest: 86 87 88 89 90
## ---------------------------------------------------------------------------
## gender
##        n  missing distinct
##      158        0        2
##
## Value      1 Female   2 Male
## Frequency       142       16
## Proportion    0.899    0.101
## ---------------------------------------------------------------------------
## race
##        n  missing distinct
##      158        0        3
##
## Value      1 White 2 Black 3 Other
## Frequency      110      38      10
## Proportion   0.696   0.241   0.063
## ---------------------------------------------------------------------------
## smoking
##        n  missing distinct
##      150        8        3
##
## Value        1 Never 2 Current  3 Former
## Frequency        112         4        34
## Proportion     0.747     0.027     0.227
## ---------------------------------------------------------------------------
## elmiron
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    122    36
## Proportion 0.772 0.228
## ---------------------------------------------------------------------------
## hydroxyzine
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    122    36
## Proportion 0.772 0.228
## ---------------------------------------------------------------------------
## tca
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    112    46
## Proportion 0.709 0.291
## ---------------------------------------------------------------------------
## gabapentin
```

```
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency     96    62
## Proportion 0.608 0.392
## ---------------------------------------------------------------------------
## hydroxychloroquine
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    149     9
## Proportion 0.943 0.057
## ---------------------------------------------------------------------------
## cyclobenzaprine
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    119    39
## Proportion 0.753 0.247
## ---------------------------------------------------------------------------
## methenamine
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    125    33
## Proportion 0.791 0.209
## ---------------------------------------------------------------------------
## phenazopyridine
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    112    46
## Proportion 0.709 0.291
## ---------------------------------------------------------------------------
## oxybutynin
##        n  missing distinct
##      158        0        2
##
## Value         no   yes
## Frequency    135    23
## Proportion 0.854 0.146
## ---------------------------------------------------------------------------
## outcome
##        n  missing distinct    value
##      158        0        1       no
##
## Value       no
## Frequency  158
## Proportion   1
```

```
## ---------------------------------------------------------------------------
```

Fisher's Exact Tests

Odds ratio values given here are "hypothesized odds ratio"- different from sample odds ratio which we typically report. Sample odds ratio given in next section

```r
ic_sensitivity %>% select(-id,-ic_list,-cases,-outcome,-age_last_visit) %>%
  sapply(.,y= ic_sensitivity$outcome,function(x,y) fisher.test(y,x))
```

```
## $gender
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.5398
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   0.03028728 13.42560678
## sample estimates:
## odds ratio
##   1.475125
##
##
## $race
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.6152
## alternative hypothesis: two.sided
##
##
## $smoking
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: two.sided
##
##
## $elmiron
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.05965
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   0.7198942 31.9082656
## sample estimates:
## odds ratio
```

```
##   4.466291
##
##
## $hydroxyzine
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.3576
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   0.3535386 15.6785414
## sample estimates:
## odds ratio
##   2.524431
##
##
## $tca
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##  0.08969406 6.21420804
## sample estimates:
## odds ratio
##  0.9740496
##
##
## $gabapentin
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##  0.1643564 7.1123540
## sample estimates:
## odds ratio
##   1.160219
##
##
## $hydroxychloroquine
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   0.00000 13.49227
```

```
## sample estimates:
## odds ratio
##          0
##
##
## $cyclobenzaprine
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##  0.1118345 7.8159694
## sample estimates:
## odds ratio
##   1.219004
##
##
## $methenamine
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 1
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##  0.01333047 5.50256741
## sample estimates:
## odds ratio
##  0.6328718
##
##
## $phenazopyridine
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.4248
## alternative hypothesis: true odds ratio is not equal to 1
## 95 percent confidence interval:
##   0.2563609 11.2140999
## sample estimates:
## odds ratio
##   1.818694
##
##
## $oxybutynin
##
##  Fisher's Exact Test for Count Data
##
## data:  y and x
## p-value = 0.2868
## alternative hypothesis: true odds ratio is not equal to 1
```

```
## 95 percent confidence interval:
##   0.2102611 15.3242932
## sample estimates:
## odds ratio
##   2.332249
```

Levene's test for Equality of variance does not reject the null hypothesis (Variances are equal)

```r
car::leveneTest(age_last_visit~outcome,data=ic_sensitivity)
```

```
## Levene's Test for Homogeneity of Variance (center = median)
##        Df F value Pr(>F)
## group   1  2.6374 0.1063
##       163
```

We will use Independent Two-sample T-test (Pooled) We do not reject the null hypothesis that age at last visit is different across the outcome group

```r
t.test(age_last_visit~outcome,data=ic_sensitivity,var.equal=TRUE)
```

```
##
##  Two Sample t-test
##
## data:  age_last_visit by outcome
## t = -0.91062, df = 163, p-value = 0.3638
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -17.363404   6.403187
## sample estimates:
##  mean in group no mean in group yes
##          61.23418          66.71429
```

```r
with(ic_sensitivity,table(outcome,elmiron))
```

```
##        elmiron
## outcome  no yes
##     no  122  36
##     yes   3   4
```

Sample Odds ratio

```r
ic_sensitivity %>% select(-id,-ic_list,-cases,-outcome,-age_last_visit) %>%
  sapply(.,y= ic_sensitivity$outcome,function(x,y) exp(coef(glm(y~x,family="binomial"))))
```

```
## $gender
## (Intercept)     x2 Male
##  0.04225352  1.47916667
##
## $race
## (Intercept)    x2 Black    x3 Other
```

```
##  0.04545455  0.57894737  2.20000000
##
## $smoking
##  (Intercept)   x2 Current    x3 Former
## 5.357143e-02 4.387531e-07 5.490196e-01
##
## $elmiron
## (Intercept)        xyes
##  0.02459016  4.51851852
##
## $hydroxyzine
## (Intercept)        xyes
##  0.03278689  2.54166667
##
## $tca
## (Intercept)        xyes
##  0.04464286  0.97391304
##
## $gabapentin
## (Intercept)        xyes
##  0.04166667  1.16129032
##
## $hydroxychloroquine
##  (Intercept)         xyes
## 4.697987e-02 1.840548e-07
##
## $cyclobenzaprine
## (Intercept)        xyes
##  0.04201681  1.22051282
##
## $methenamine
## (Intercept)        xyes
##   0.0480000   0.6313131
##
## $phenazopyridine
## (Intercept)        xyes
##  0.03571429  1.82608696
##
## $oxybutynin
## (Intercept)        xyes
##  0.03703704  2.34782609
```

```r
confint_glm <- function(x,y){
  mod <- glm(y~x,family="binomial")
  mod_df <- broom::tidy(mod)
  mod_df <- mod_df %>% mutate(lci = exp(estimate-1.96*std.error),
                              uci = exp(estimate+1.96*std.error)) %>%
    mutate(estimate = exp(estimate)) %>% select(term,estimate,lci,uci)
  print(mod_df)
}


ic_sensitivity %>% select(-id,-cases,-outcome,-ic_list) %>%
  sapply(.,y= ic_sensitivity$outcome,function(x,y) {confint_glm(x,y)})
```

```
## # A tibble: 2 x 4
##   term        estimate      lci   uci
##   <chr>          <dbl>    <dbl> <dbl>
## 1 (Intercept)  0.00921 0.000249 0.341
## 2 x            1.02    0.972    1.08
## # A tibble: 2 x 4
##   term        estimate    lci     uci
##   <chr>          <dbl>  <dbl>   <dbl>
## 1 (Intercept)   0.0423 0.0187  0.0956
## 2 x2 Male       1.48   0.167  13.1
## # A tibble: 3 x 4
##   term        estimate    lci    uci
##   <chr>          <dbl>  <dbl>  <dbl>
## 1 (Intercept)   0.0455 0.0186  0.111
## 2 x2 Black      0.579  0.0655  5.11
## 3 x3 Other      2.20   0.234  20.7
## # A tibble: 3 x 4
##   term           estimate    lci     uci
##   <chr>             <dbl>  <dbl>   <dbl>
## 1 (Intercept) 0.0536      0.0236   0.122
## 2 x2 Current  0.000000439 0      Inf
## 3 x3 Former   0.549       0.0639   4.72
## # A tibble: 2 x 4
##   term        estimate     lci     uci
##   <chr>          <dbl>   <dbl>   <dbl>
## 1 (Intercept)   0.0246 0.00782  0.0773
## 2 xyes          4.52   0.966   21.1
## # A tibble: 2 x 4
##   term        estimate    lci     uci
##   <chr>          <dbl>  <dbl>   <dbl>
## 1 (Intercept)   0.0328 0.0121  0.0888
## 2 xyes          2.54   0.544  11.9
## # A tibble: 2 x 4
##   term        estimate    lci   uci
##   <chr>          <dbl>  <dbl> <dbl>
## 1 (Intercept)   0.0446 0.0182 0.109
## 2 xyes          0.974  0.182  5.20
## # A tibble: 2 x 4
##   term        estimate    lci   uci
##   <chr>          <dbl>  <dbl> <dbl>
## 1 (Intercept)   0.0417 0.0153 0.113
## 2 xyes          1.16   0.251  5.37
## # A tibble: 2 x 4
##   term           estimate    lci     uci
##   <chr>             <dbl>  <dbl>   <dbl>
## 1 (Intercept) 0.0470      0.0220   0.100
## 2 xyes        0.000000184 0      Inf
## # A tibble: 2 x 4
##   term        estimate    lci   uci
##   <chr>          <dbl>  <dbl> <dbl>
## 1 (Intercept)   0.0420 0.0172 0.103
## 2 xyes          1.22   0.228  6.54
## # A tibble: 2 x 4
##   term        estimate    lci   uci
```

```
##   <chr>          <dbl>  <dbl> <dbl>
## 1 (Intercept)   0.0480 0.0212 0.109
## 2 xyes          0.631  0.0734 5.43
## # A tibble: 2 x 4
##   term        estimate    lci    uci
##   <chr>          <dbl>  <dbl>  <dbl>
## 1 (Intercept)   0.0357 0.0132 0.0968
## 2 xyes          1.83   0.393  8.48
## # A tibble: 2 x 4
##   term        estimate    lci     uci
##   <chr>          <dbl>  <dbl>   <dbl>
## 1 (Intercept)   0.0370 0.0152  0.0904
## 2 xyes          2.35   0.430  12.8

##          age_last_visit gender      race        smoking     elmiron
## term     Character,2    Character,2 Character,3 Character,3 Character,2
## estimate Numeric,2      Numeric,2   Numeric,3   Numeric,3   Numeric,2
## lci      Numeric,2      Numeric,2   Numeric,3   Numeric,3   Numeric,2
## uci      Numeric,2      Numeric,2   Numeric,3   Numeric,3   Numeric,2
##          hydroxyzine tca         gabapentin  hydroxychloroquine
## term     Character,2 Character,2 Character,2 Character,2
## estimate Numeric,2   Numeric,2   Numeric,2   Numeric,2
## lci      Numeric,2   Numeric,2   Numeric,2   Numeric,2
## uci      Numeric,2   Numeric,2   Numeric,2   Numeric,2
##          cyclobenzaprine methenamine phenazopyridine oxybutynin
## term     Character,2     Character,2 Character,2     Character,2
## estimate Numeric,2       Numeric,2   Numeric,2       Numeric,2
## lci      Numeric,2       Numeric,2   Numeric,2       Numeric,2
## uci      Numeric,2       Numeric,2   Numeric,2       Numeric,2
```