## 8.7 Appendix 7

**R Studio script – R Studio version 1.4.1106.**

## Load data

df\_a <- read.csv("~/analysis\_df.csv", header=FALSE)

View(df\_a)

## Amend headers

names(df\_a) <- df\_a[1,]

df\_a <- df\_a[-1,]

head(df\_a)

summary(df\_a)

## Update types

df\_a$warning\_status <- as.numeric(df\_a$warning\_status)

df\_a$provider\_type <- as.factor(df\_a$provider\_type)

df\_a$provider\_specialty <- as.factor(df\_a$provider\_specialty)

df\_a$description <- as.factor(df\_a$description)

df\_a$context <- as.factor(df\_a$context)

df\_a$drug\_allergy\_reactions <- as.factor(df\_a$drug\_allergy\_reactions)

df\_a$age\_range <- as.factor(df\_a$age\_range)

df\_a$sex <- as.factor(df\_a$sex)

str(df\_a)

## Install packages

install.packages('aod')

library(aod)

## Unadjusted logisic regression, ORs, CIs and Wald test for trend

## provider\_type

mylogit2 <- glm(warning\_status ~ provider\_type, data = df\_a, family = "binomial")

summary(mylogit2)

exp(cbind(OR = coef(mylogit2), confint(mylogit2)))

wald.test(b = coef(mylogit2), Sigma = vcov(mylogit2), Terms = 1:12)

## provider\_specialty

mylogit3 <- glm(warning\_status ~ provider\_specialty, data = df\_a, family = "binomial")

summary(mylogit3)

exp(cbind(OR = coef(mylogit3), confint(mylogit3)))

wald.test(b = coef(mylogit3), Sigma = vcov(mylogit3), Terms = 1:9)

## description

mylogit5 <- glm(warning\_status ~ description, data = df\_a, family = "binomial")

summary(mylogit5)

exp(cbind(OR = coef(mylogit5), confint(mylogit5)))

wald.test(b = coef(mylogit5), Sigma = vcov(mylogit5), Terms = 1:9)

## context

mylogit6 <- glm(warning\_status ~ context, data = df\_a, family = "binomial")

summary(mylogit6)

exp(cbind(OR = coef(mylogit6), confint(mylogit6)))

wald.test(b = coef(mylogit6), Sigma = vcov(mylogit6), Terms = 1:3)

## drug\_allergy\_reactions

mylogit7 <- glm(warning\_status ~ drug\_allergy\_reactions, data = df\_a, family = "binomial")

summary(mylogit7)

exp(cbind(OR = coef(mylogit7), confint(mylogit7)))

wald.test(b = coef(mylogit7), Sigma = vcov(mylogit7), Terms = 1:8)

## age\_range

mylogit8 <- glm(warning\_status ~ age\_range, data = df\_a, family = "binomial")

summary(mylogit8)

exp(cbind(OR = coef(mylogit8), confint(mylogit8)))

wald.test(b = coef(mylogit8), Sigma = vcov(mylogit8), Terms = 1:9)

## sex

mylogit9 <- glm(warning\_status ~ sex, data = df\_a, family = "binomial")

summary(mylogit9)

exp(cbind(OR = coef(mylogit9), confint(mylogit9)))

wald.test(b = coef(mylogit9), Sigma = vcov(mylogit9), Terms = 1:2)

str(df\_a)

#####

## Adjusted regression - provider\_type + provider\_specialty

mylogit\_b <- glm(formula = warning\_status ~ provider\_type + provider\_specialty + description + context + drug\_allergy\_reactions + age\_range + sex, family = "binomial", data = df\_a)

summary(mylogit\_b)

## odds ratios and 95% CI

exp(cbind(OR = coef(mylogit\_b), confint(mylogit\_b)))