Appendix 4.7: Participation of women 25-49 years in cervical screening R script

# Benin

# Tested for cervical cancer ages 15 - 49 years  
freq(BJDHS2$s1426, BJDHS2$BJwt2, plot = FALSE)   
BJTest\_recoded <- c("no" = "No", "yes"= "Yes", "don't know" = "No")  
BJDHS2$BJ\_Tested <- BJTest\_recoded[BJDHS2$s1426]  
freq(BJDHS2$BJ\_Tested, BJDHS2$BJwt2, plot = FALSE)   
class(BJDHS2$BJ\_Tested) # Change to factor   
BJDHS2$BJ\_Tested <- as.factor(BJDHS2$BJ\_Tested)  
summary(BJDHS2$BJ\_Tested)  
BJDHS2b <- subset(BJDHS2, v012 >= 25 & v012 <= 49)  
BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
designBJ2b <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~BJwt2b, data = BJDHS2b)  
# Tested for cervical cancer ages 25 - 49 years  
freq(BJDHS2b$s1426, BJDHS2b$BJwt2b, plot = FALSE)   
BJTest\_recodedb <- c("no" = "No", "yes"= "Yes", "don't know" = "No")  
BJDHS2b$BJ\_Testedb <- BJTest\_recodedb[BJDHS2b$s1426]  
freq(BJDHS2b$BJ\_Testedb, BJDHS2b$BJwt2b, plot = FALSE)   
class(BJDHS2b$BJ\_Testedb) # Change to factor   
BJDHS2b$BJ\_Testedb <- as.factor(BJDHS2b$BJ\_Testedb)  
summary(BJDHS2b$BJ\_Testedb)  
# Mean Age   
BJttAge2 <- svyttest(v012~0, designBJ2b)  
BJttAge2  
svyby(~v012, BJDHS2b$BJ\_Testedb, designBJ2b, svymean, vartype="ci") # Mean age of those particpating in screening  
# Mean Age  
BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
freq(BJDHS2b$v013, BJDHS2b$BJwt2b, plot = FALSE) #Age  
svymean(~v012, design = designBJ2b, na.rm = FALSE)  
confint(svymean(~v012, designBJ2b))  
  
# Age Regrouped  
BJDHS2b$BJAgeCatb <- NA  
BJDHS2b$BJAgeCatb[BJDHS2b$v012 >=25.0000 & BJDHS2b$v012<=34.9999]<-"25-34"  
BJDHS2b$BJAgeCatb[BJDHS2b$v012 >=35.0000 & BJDHS2b$v012<=44.9999]<-"35-44"  
BJDHS2b$BJAgeCatb[BJDHS2b$v012 >=45.0000]<-"45+"  
freq(BJDHS2b$BJAgeCatb, BJDHS2b$BJwt2b, plot = FALSE)  
class(BJDHS2b$BJAgeCatb) # Change to factor   
BJDHS2b$BJAgeCatb <- as.factor(BJDHS2b$BJAgeCatb)  
summary(BJDHS2b$BJAgeCatb)  
BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
designBJ2b <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~BJwt2b, data = BJDHS2b)  
  
freq(BJDHS2b$v025, BJDHS2b$BJwt2b, plot = FALSE) #Residential status  
freq(BJDHS2b$v502, BJDHS2b$BJwt2b, plot = FALSE) #Marital status  
freq(BJDHS2b$v106, BJDHS2b$BJwt2b, plot = FALSE) #Education  
freq(BJDHS2b$v714, BJDHS2b$BJwt2b, plot = FALSE) #Employment   
freq(BJDHS2b$v190, BJDHS2b$BJwt2b, plot = FALSE) #Wealth index  
freq(BJDHS2b$v130, BJDHS2b$BJwt2b, plot = FALSE) # Religion2b  
BJRel\_recoded2b <- c("vodoun" = "Others", "other traditional"= "Others", "islam " = "Muslims", "catholic" = "Christians",   
 "protestant methodist" = "Christians", "other protestants" = "Christians", "celestes" = "Christians", "other christians" = "Christians",  
 "other religions" = "Others", "no religion"= "Others")  
  
BJDHS2b$BJ\_Religion2b <- BJRel\_recoded2b[BJDHS2b$v130]  
freq(BJDHS2b$BJ\_Religion2b, BJDHS2b$BJwt2b, plot = FALSE)  
freq(BJDHS2b$v463z, BJDHS2b$BJwt2b, plot = FALSE) #Use of Cigarette and Tobacco  
BJDHS2b$BJASb <- paste(BJDHS2b$s1423, "-", BJDHS2b$s1424) # Awareness of CC/S  
BJDHS2b$BJASb  
freq(BJDHS2b$BJASb, plot = FALSE)  
BJAS\_recodedb <- c("no - NA" = 0, "yes - no" = 1, "yes - yes" =2)  
BJDHS2b$BJAScomb <- BJAS\_recodedb[BJDHS2b$BJAS]  
freq(BJDHS2b$BJAScomb, BJDHS2b$BJwt2b, plot = FALSE)  
class(BJDHS2b$BJAScomb) # Change to factor   
BJDHS2b$BJAScomb <- as.factor(BJDHS2b$BJAScomb)  
summary(BJDHS2b$BJAScomb)  
BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
designBJ2b <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~BJwt2b, data = BJDHS2b)  
freq(BJDHS2b$BJAScomb, BJDHS2b$BJwt2b, plot = FALSE)  
freq(BJDHS2b$v481, BJDHS2b$BJwt2b, plot = FALSE) # covered by health insurance  
freq(BJDHS2b$v467b, BJDHS2b$BJwt2b, plot = FALSE) # getting medical help for self: getting permission to go  
freq(BJDHS2b$v467c, BJDHS2b$BJwt2b, plot = FALSE) # getting medical help for self: getting money needed for treatment  
freq(BJDHS2b$v467d, BJDHS2b$BJwt2b, plot = FALSE) # getting medical help for self: distance to health facility  
freq(BJDHS2b$v467f, BJDHS2b$BJwt2b, plot = FALSE) # getting medical help for self: not wanting to go alone  
# Media Exposure  
freq(BJDHS2b$v157, BJDHS2b$BJwt2b, plot = FALSE) # Frequency of reading newspaper or magazine  
BJread\_recoded2b <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
BJDHS2b$BJ\_News2b <- BJread\_recoded2b[BJDHS2b$v157]  
freq(BJDHS2b$BJ\_News2b, BJDHS2b$BJwt2b, plot = FALSE)   
freq(BJDHS2b$v159, BJDHS2b$BJwt2b, plot = FALSE) # Frequency of watching television  
BJtv\_recoded2b <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
BJDHS2b$BJ\_WatchTV2b <- BJtv\_recoded2b[BJDHS2b$v159]  
freq(BJDHS2b$BJ\_WatchTV2b, BJDHS2b$BJwt2b, plot = FALSE)   
freq(BJDHS2b$v158, BJDHS2b$BJwt2b, plot = FALSE) # Frequency of listening to radio   
BJrad\_recoded2b <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
BJDHS2b$BJ\_Listenrad2b <- BJtv\_recoded2b[BJDHS2b$v158]  
freq(BJDHS2b$BJ\_Listenrad2b, BJDHS2b$BJwt2b, plot = FALSE)  
freq(BJDHS2b$v171a, BJDHS2b$BJwt2b, plot = FALSE) # Used the Internet ever and in past year   
BJint\_recoded2b <- c("never" = "No", "yes, last 12 months"= "Yes", "yes, before last 12 months " = "Yes", "yes, can't establish when" = "Yes")  
BJDHS2b$BJ\_Internet2b <- BJint\_recoded2b[BJDHS2b$v171a]  
freq(BJDHS2b$BJ\_Internet2b, BJDHS2b$BJwt2b, plot = FALSE)

# Cameroon

# Tested for cervical cancer ages 15-49 years  
freq(CMAGE49$s1226, CMAGE49$CMwt, plot = FALSE)   
CMTest\_recoded <- c("no" = "No", "yes"= "Yes", "don't know" = "No")  
CMAGE49$CM\_Tested <- CMTest\_recoded[CMAGE49$s1226]  
freq(CMAGE49$CM\_Tested, CMAGE49$CMwt, plot = FALSE)   
class(CMAGE49$CM\_Tested) # Change to factor   
CMAGE49$CM\_Tested <- as.factor(CMAGE49$CM\_Tested)  
summary(CMAGE49$CM\_Tested)  
  
CMAGE49b <- subset(CMAGE49, v012 >= 25 & v012 <= 49)  
CMAGE49b$CMwtb <- CMAGE49b$v005/1000000  
designCMb <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwtb, data = CMAGE49b)  
# Tested for cervical cancer ages 25-49 years  
freq(CMAGE49b$s1226, CMAGE49b$CMwtb, plot = FALSE)   
CMTest\_recodedb <- c("no" = "No", "yes"= "Yes", "don't know" = "No")  
CMAGE49b$CM\_Testedb <- CMTest\_recodedb[CMAGE49b$s1226]  
freq(CMAGE49b$CM\_Testedb, CMAGE49b$CMwtb, plot = FALSE)   
class(CMAGE49b$CM\_Testedb) # Change to factor   
CMAGE49b$CM\_Testedb <- as.factor(CMAGE49b$CM\_Testedb)  
summary(CMAGE49b$CM\_Testedb)  
# Mean Age   
CMttAge2 <- svyttest(v012~0, designCMb)  
CMttAge2  
svyby(~v012, CMAGE49b$CM\_Testedb, designCMb, svymean, vartype="ci") # Mean age of those particpating in screening  
# Age  
freq(CMAGE49b$v013, CMAGE49b$CMwtb, plot = FALSE) #Age  
svymean(~v012, design = designCMb, na.rm = FALSE)  
confint(svymean(~v012, designCMb))  
# Age Regrouped  
CMAGE49b$CMAgeCatb <- NA  
CMAGE49b$CMAgeCatb[CMAGE49b$v012 >=25.0000 & CMAGE49b$v012<=34.9999]<-"25-34"  
CMAGE49b$CMAgeCatb[CMAGE49b$v012 >=35.0000 & CMAGE49b$v012<=49.9999]<-"35-44"  
CMAGE49b$CMAgeCatb[CMAGE49b$v012 >=45.0000]<-"45+"  
freq(CMAGE49b$CMAgeCatb, CMAGE49b$CMwtb, plot = FALSE)   
class(CMAGE49b$CMAgeCatb)   
CMAGE49b$CMAgeCatb <- as.factor(CMAGE49b$CMAgeCatb)  
summary(CMAGE49b$CMAgeCatb)  
CMAGE49b$CMwtb <- CMAGE49b$v005/1000000  
designCMb <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwtb, data = CMAGE49b)  
  
freq(CMAGE49b$v025, CMAGE49b$CMwtb, plot = FALSE) #Residential status  
freq(CMAGE49b$v502, CMAGE49b$CMwtb, plot = FALSE) #Marital status  
freq(CMAGE49b$v106, CMAGE49b$CMwtb, plot = FALSE) #Education  
freq(CMAGE49b$v714, CMAGE49b$CMwtb, plot = FALSE) #Employment   
freq(CMAGE49b$v190, CMAGE49b$CMwtb, plot = FALSE) #Wealth index  
freq(CMAGE49b$v130, CMAGE49b$CMwtb, plot = FALSE) #Religion2b  
CMRel\_recoded2b <- c("catholic" = "Christians", "protestant" = "Christians", "other christians" = "Christians",  
 "muslim " = "Muslims", "animist" = "Others", "none"= "Others", "other" ="Others" )  
CMAGE49b$CM\_Religion2b <- CMRel\_recoded2b[CMAGE49b$v130]  
freq(CMAGE49b$CM\_Religion2b, CMAGE49b$CMwtb, plot = FALSE)  
class(CMAGE49b$CM\_Religion2b)   
CMAGE49b$CM\_Religion2b <- as.factor(CMAGE49b$CM\_Religion2b)  
summary(CMAGE49b$CM\_Religion2b)  
CMAGE49b$CMwtb <- CMAGE49b$v005/1000000  
designCMb <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwtb, data = CMAGE49b)  
freq(CMAGE49b$v463z, CMAGE49b$CMwtb, plot = FALSE) #Use of Cigarette and Tobacco  
CMAGE49b$CMASb <- paste(CMAGE49b$s1223, "-", CMAGE49b$s1224) # Awareness of CC/S  
CMAGE49b$CMASb  
freq(CMAGE49b$CMASb, plot = FALSE)  
CMAS\_recodedb <- c("no - NA" = 0, "yes - no" = 1, "yes - yes" =2)  
CMAGE49b$CMAScomb <- CMAS\_recodedb[CMAGE49b$CMASb]  
freq(CMAGE49b$CMAScomb, CMAGE49b$CMwtb, plot = FALSE)   
class(CMAGE49b$CMAScomb)   
CMAGE49b$CMAScomb <- as.factor(CMAGE49b$CMAScomb)  
summary(CMAGE49b$CMAScomb)  
CMAGE49b$CMwtb <- CMAGE49b$v005/1000000  
designCMb <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwtb, data = CMAGE49b)  
freq(CMAGE49b$v481, CMAGE49b$CMwtb, plot = FALSE) # covered by health insurance  
freq(CMAGE49b$v467b, CMAGE49b$CMwtb, plot = FALSE) # getting medical help for self: getting permission to go  
freq(CMAGE49b$v467c, CMAGE49b$CMwtb, plot = FALSE) # getting medical help for self: getting money needed for treatment  
freq(CMAGE49b$v467d, CMAGE49b$CMwtb, plot = FALSE) # getting medical help for self: distance to health facility  
freq(CMAGE49b$v467f, CMAGE49b$CMwtb, plot = FALSE) # getting medical help for self: not wanting to go alone  
# Media Exposure  
freq(CMAGE49b$v157, CMAGE49b$CMwtb, plot = FALSE) # Frequency of reading newspaper or magazine  
CMread\_recodedb <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
CMAGE49b$CM\_Newsb <- CMread\_recodedb[CMAGE49b$v157]  
freq(CMAGE49b$CM\_Newsb, CMAGE49b$CMwtb, plot = FALSE)   
freq(CMAGE49b$v159, CMAGE49b$CMwtb, plot = FALSE) # Frequency of watching television  
CMtv\_recodedb <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
CMAGE49b$CM\_WatchTVb <- CMtv\_recodedb[CMAGE49b$v159]  
freq(CMAGE49b$CM\_WatchTVb, CMAGE49b$CMwtb, plot = FALSE)   
freq(CMAGE49b$v158, CMAGE49b$CMwtb, plot = FALSE) # Frequency of listening to radio   
CMrad\_recodedb <- c("not at all" = "No", "less than once a week"= "Yes", "at least once a week" = "Yes", "almost every day" = "Yes")  
CMAGE49b$CM\_Listenradb <- CMtv\_recodedb[CMAGE49b$v158]  
freq(CMAGE49b$CM\_Listenradb, CMAGE49b$CMwtb, plot = FALSE)  
freq(CMAGE49b$v171a, CMAGE49b$CMwtb, plot = FALSE) # Used the Internet ever and in past year #####??????  
CMint\_recodedb <- c("never" = "No", "yes, last 12 months"= "Yes", "yes, before last 12 months " = "Yes", "yes, can't establish when" = "Yes")  
CMAGE49b$CM\_Internetb <- CMint\_recodedb[CMAGE49b$v171a]  
freq(CMAGE49b$CM\_Internetb, CMAGE49b$CMwtb, plot = FALSE)

# Barplot of participation in cervical cancer screening Benin and Cameroon

Prop\_Part <- c(0.8, 5.2, # Benin  
 99.2, 94.8) # Cameroon  
  
PropCountry\_Part <- matrix(Prop\_Part, nrow = 2, byrow = T)  
colnames(PropCountry\_Part) <- c("Benin", "Cameroon")  
row.names(PropCountry\_Part) <- c("Yes", "No")  
PropCountry\_Part  
color.names = c("green3", "red2")  
barplot(PropCountry\_Part, beside = T, xlab = "Country", ylab = "Percentage", col = color.names)  
legend(1, 2300, row.names(PropCountry\_Part), cex = 0.7, fill = color.names, bty = "n")  
  
# ggplot2 Grouped Bar Plot (reshape2 package)  
PropCountry\_Partmelt <- melt(PropCountry\_Part)  
head(PropCountry\_Partmelt)  
colnames(PropCountry\_Partmelt) <- c( "Participation", "Country", "Percentage")  
head(PropCountry\_Partmelt)  
ggplot(PropCountry\_Partmelt, aes(x= Country, y= Percentage, fill= Participation))  
geom\_bar(stat = "identity", position = "dodge")  
scale\_fill\_brewer(palette = "Set1")  
labs(y= "Percentage")  
theme\_bw()  
theme(panel.grid.major.x = element\_blank())  
ggplot(PropCountry\_Partmelt, aes(x= Country, y= Percentage, fill = Participation)) +  
 geom\_bar(stat = "identity", position = "dodge") +  
 facet\_grid(.~Participation) +  
 scale\_fill\_brewer(palette = "Set1") +  
 labs(y= "Percentage") +  
 expand\_limits(y = c(0, 100)) +  
 theme\_bw() +  
 theme(legend.position = "none")

# Mean age (95% confidence interval (CI) error bar) of female participants aged 25 -49 years participating in cervical cancer screening

# No  
my.dt3 <- data.frame(Country = c("Benin", "Cameroon"),  
 Mean = c(34.37 , 34.14),  
 down = c(34.13, 33.94),  
 up = c(34.62, 34.35))  
  
my.dt3  
c <- ggplot(my.dt3, aes(x=Country, y=Mean, colour=Country)) +   
 geom\_point(size = 3) +  
 geom\_errorbar(aes(ymin = down, ymax = up)) +  
 theme\_classic() +  
 theme(legend.position="none")   
c  
  
#Yes  
my.dt4 <- data.frame(Country = c("Benin", "Cameroon"),  
 Mean = c(34.92, 36.75),  
 down = c(32.76, 35.88),  
 up = c(37.09, 37.62))  
  
my.dt4  
d <- ggplot(my.dt4, aes(x=Country, y=Mean, colour=Country)) +   
 geom\_point(size = 3) +  
 geom\_errorbar(aes(ymin = down, ymax = up)) +  
 theme\_classic() +  
 theme(legend.position="none")   
d  
ggarrange(c,d, labels = c("No", "Yes"))  
ggsave("ggpubrsave16.jpg", width = 10, height = 6, units = c("in"), dpi = 300)

# Firth’s Method

# Benin Firth’s Logistic Regression

BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
designBJ2b <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~BJwt2b, data = BJDHS2b)  
# Unadjusted   
# Age  
outcome = BJDHS2b$BJ\_Testedb  
pred = BJDHS2b$BJAgeCatb  
BJAgefitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJAgefitb)  
exp(coef(BJAgefitb))  
round(cbind(OR = exp(coef(BJAgefitb)), exp(confint(BJAgefitb))), 2) # round to 2  
# Residential Status  
pred = BJDHS2b$v025  
BJRSfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJRSfitb)  
exp(coef(BJRSfitb))  
round(cbind(OR = exp(coef(BJRSfitb)), exp(confint(BJRSfitb))), 2) # round to 2  
# Marital Status  
pred = BJDHS2b$v502  
BJMSfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJMSfitb)  
exp(coef(BJMSfitb))  
round(cbind(OR = exp(coef(BJMSfitb)), exp(confint(BJMSfitb))), 2) # round to 2  
# Education  
pred = BJDHS2b$v106  
BJEdufitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJEdufitb)  
exp(coef(BJEdufitb))  
round(cbind(OR = exp(coef(BJEdufitb)), exp(confint(BJEdufitb))), 2) # round to 2  
# Employment  
pred = BJDHS2b$v714  
BJEmpfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJEmpfitb)  
exp(coef(BJEmpfitb))  
round(cbind(OR = exp(coef(BJEmpfitb)), exp(confint(BJEmpfitb))), 2) # round to 2  
# Wealth Index  
pred = BJDHS2b$v190  
BJWIfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJWIfitb)  
exp(coef(BJWIfitb))  
round(cbind(OR = exp(coef(BJWIfitb)), exp(confint(BJWIfitb))), 2) # round to 2  
# Religion  
pred = BJDHS2b$BJ\_Religion2b  
BJRelfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJRelfitb)  
exp(coef(BJRelfitb))  
round(cbind(OR = exp(coef(BJRelfitb)), exp(confint(BJRelfitb))), 2) # round to 2  
# Smoking  
pred = BJDHS2b$v463z  
BJSmkfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJSmkfitb)  
exp(coef(BJSmkfitb))  
round(cbind(OR = exp(coef(BJSmkfitb)), exp(confint(BJSmkfitb))), 2) # round to 2  
# Awareness of cervical cancer/screening  
pred = BJDHS2b$BJAScomb  
BJAwafitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJAwafitb)  
exp(coef(BJAwafitb))  
round(cbind(OR = exp(coef(BJAwafitb)), exp(confint(BJAwafitb))), 2) # round to 2  
# Health Insurance  
pred = BJDHS2b$v481  
BJHIfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJHIfitb)  
exp(coef(BJHIfitb))  
round(cbind(OR = exp(coef(BJHIfitb)), exp(confint(BJHIfitb))), 2) # round to 2  
# getting medical help for self: getting permission to go  
pred = BJDHS2b$v467b  
BJperfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJperfitb)  
exp(coef(BJperfitb))  
round(cbind(OR = exp(coef(BJperfitb)), exp(confint(BJperfitb))), 2) # round to 2  
# getting medical help for self: getting money needed for treatment  
pred = BJDHS2b$v467c  
BJmonfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJmonfitb)  
exp(coef(BJmonfitb))  
round(cbind(OR = exp(coef(BJmonfitb)), exp(confint(BJmonfitb))), 2) # round to 2  
# getting medical help for self: distance to health facility  
pred = BJDHS2b$v467d  
BJdistfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJdistfitb)  
exp(coef(BJdistfitb))  
round(cbind(OR = exp(coef(BJdistfitb)), exp(confint(BJdistfitb))), 2) # round to 2  
# getting medical help for self: not wanting to go alone  
pred = BJDHS2b$v467f  
BJalonfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJalonfitb)  
exp(coef(BJalonfitb))  
round(cbind(OR = exp(coef(BJalonfitb)), exp(confint(BJalonfitb))), 2) # round to 2  
# Frequency of reading newspaper or magazine  
pred = BJDHS2b$BJ\_News2b  
BJNewsfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJNewsfitb)  
exp(coef(BJNewsfitb))  
round(cbind(OR = exp(coef(BJNewsfitb)), exp(confint(BJNewsfitb))), 2) # round to 2  
# Frequency of watching television  
pred = BJDHS2b$BJ\_WatchTV2b  
BJWatchTVfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJWatchTVfitb)  
exp(coef(BJWatchTVfitb))  
round(cbind(OR = exp(coef(BJWatchTVfitb)), exp(confint(BJWatchTVfitb))), 2) # round to 2  
# Frequency of listening to radio   
pred = BJDHS2b$BJ\_Listenrad2b  
BJListenradfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJListenradfitb)  
exp(coef(BJListenradfitb))  
round(cbind(OR = exp(coef(BJListenradfitb)), exp(confint(BJListenradfitb))), 2) # round to 2  
# Frequency of using Internet in last month  
pred = BJDHS2b$BJ\_Internet2b  
BJInternetfitb <- logistf(design=designBJ2b, outcome~pred, firth = TRUE, pl = FALSE)  
summary(BJInternetfitb)  
exp(coef(BJInternetfitb))  
round(cbind(OR = exp(coef(BJInternetfitb)), exp(confint(BJInternetfitb))), 2) # round to 2  
# Adjusted  
# Using Chi- square result  
BJAdjfitb <- logistf(design=designBJ2b, outcome~BJDHS2b$v025 +   
 BJDHS2b$v106 + BJDHS2b$v190 + BJDHS2b$BJ\_Religion2b +   
 BJDHS2b$BJAScomb + BJDHS2b$v467c +   
 BJDHS2b$BJ\_News2b + BJDHS2b$BJ\_WatchTV2b + BJDHS2b$BJ\_Listenrad2b +   
 BJDHS2b$BJ\_Internet2b, firth = TRUE, pl = FALSE)  
summary(BJAdjfitb)  
exp(coef(BJAdjfitb))  
round(cbind(OR = exp(coef(BJAdjfitb)), exp(confint(BJAdjfitb))), 2) # round to 2

# Cameroon Firth’s Logistic Regression

CMAGE49b$CMwtb <- CMAGE49b$v005/1000000  
designCMb <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwtb, data = CMAGE49b)  
# Unadjusted   
# Age  
outcome = CMAGE49b$CM\_Testedb  
pred = CMAGE49b$CMAgeCatb  
CMAgefitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMAgefitb)  
exp(coef(CMAgefitb))  
round(cbind(OR = exp(coef(CMAgefitb)), exp(confint(CMAgefitb))), 2) # round to 2  
# Residential Status  
pred = CMAGE49b$v025  
CMRSfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMRSfitb)  
exp(coef(CMRSfitb))  
round(cbind(OR = exp(coef(CMRSfitb)), exp(confint(CMRSfitb))), 2) # round to 2  
# Marital Status  
pred = CMAGE49b$v502  
CMMSfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMMSfitb)  
exp(coef(CMMSfitb))  
round(cbind(OR = exp(coef(CMMSfitb)), exp(confint(CMMSfitb))), 2) # round to 2  
# Education  
pred = CMAGE49b$v106  
CMEdufitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMEdufitb)  
exp(coef(CMEdufitb))  
round(cbind(OR = exp(coef(CMEdufitb)), exp(confint(CMEdufitb))), 2) # round to 2  
# Employment  
pred = CMAGE49b$v714  
CMEmpfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMEmpfitb)  
exp(coef(CMEmpfitb))  
round(cbind(OR = exp(coef(CMEmpfitb)), exp(confint(CMEmpfitb))), 2) # round to 2  
# Wealth Index  
pred = CMAGE49b$v190  
CMWIfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMWIfitb)  
exp(coef(CMWIfitb))  
round(cbind(OR = exp(coef(CMWIfitb)), exp(confint(CMWIfitb))), 2) # round to 2  
# Religion  
pred = CMAGE49b$CM\_Religion2b  
CMRelfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMRelfitb)  
exp(coef(CMRelfitb))  
round(cbind(OR = exp(coef(CMRelfitb)), exp(confint(CMRelfitb))), 2) # round to 2  
#Use of Cigarette and Tobacco  
pred = CMAGE49b$v463z  
CMSmkfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMSmkfitb)  
exp(coef(CMSmkfitb))  
round(cbind(OR = exp(coef(CMSmkfitb)), exp(confint(CMSmkfitb))), 2) # round to 2  
# Awareness of CC/S  
pred = CMAGE49b$CMAScomb  
CMAwafitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMAwafitb)  
exp(coef(CMAwafitb))  
round(cbind(OR = exp(coef(CMAwafitb)), exp(confint(CMAwafitb))), 2) # round to 2  
# covered by health insurance  
pred = CMAGE49b$v481  
CMHIfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMHIfitb)  
exp(coef(CMHIfitb))  
round(cbind(OR = exp(coef(CMHIfitb)), exp(confint(CMHIfitb))), 2) # round to 2  
# getting medical help for self: getting permission to go  
pred = CMAGE49b$v467b  
CMperfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMperfitb)  
exp(coef(CMperfitb))  
round(cbind(OR = exp(coef(CMperfitb)), exp(confint(CMperfitb))), 2) # round to 2  
# getting medical help for self: getting money needed for treatment  
pred = CMAGE49b$v467c  
CMmonfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMmonfitb)  
exp(coef(CMmonfitb))  
round(cbind(OR = exp(coef(CMmonfitb)), exp(confint(CMmonfitb))), 2) # round to 2  
# getting medical help for self: distance to health facility  
pred = CMAGE49b$v467d  
CMdistfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMdistfitb)  
exp(coef(CMdistfitb))  
round(cbind(OR = exp(coef(CMdistfitb)), exp(confint(CMdistfitb))), 2) # round to 2  
# getting medical help for self: not wanting to go alone  
pred = CMAGE49b$v467f  
CMalonfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMalonfitb)  
exp(coef(CMalonfitb))  
round(cbind(OR = exp(coef(CMalonfitb)), exp(confint(CMalonfitb))), 2) # round to 2  
# Frequency of reading newspaper or magazine  
pred = CMAGE49b$CM\_Newsb  
CMNewsfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMNewsfitb)  
exp(coef(CMNewsfitb))  
round(cbind(OR = exp(coef(CMNewsfitb)), exp(confint(CMNewsfitb))), 2) # round to 2  
# Frequency of watching television  
pred = CMAGE49b$CM\_WatchTVb  
CMWatchTVfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMWatchTVfitb)  
exp(coef(CMWatchTVfitb))  
round(cbind(OR = exp(coef(CMWatchTVfitb)), exp(confint(CMWatchTVfitb))), 2) # round to 2  
# Frequency of listening to radio   
pred = CMAGE49b$CM\_Listenradb  
CMListenradfitb <- logistf(design=designCM, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMListenradfitb)  
exp(coef(CMListenradfitb))  
round(cbind(OR = exp(coef(CMListenradfitb)), exp(confint(CMListenradfitb))), 2) # round to 2  
# Frequency of using Internet in last month  
pred = CMAGE49b$CM\_Internetb  
CMInternetfitb <- logistf(design=designCMb, outcome~pred, firth = TRUE, pl = FALSE)  
summary(CMInternetfitb)  
exp(coef(CMInternetfitb))  
round(cbind(OR = exp(coef(CMInternetfitb)), exp(confint(CMInternetfitb))), 2) # round to 2  
# Adjusted  
# Using the chi square result  
CMAdjfitb <- logistf(design=designCMb, outcome~CMAGE49b$CMAgeCatb + CMAGE49b$v025 +   
 CMAGE49b$v106 + CMAGE49b$v190 + CMAGE49b$CM\_Religion2b +   
 CMAGE49b$CMAScomb + CMAGE49b$v481 + CMAGE49b$v467b + CMAGE49b$v467c + CMAGE49b$v467d +   
 CMAGE49b$v467f + CMAGE49b$CM\_Newsb + CMAGE49b$CM\_WatchTVb + CMAGE49b$CM\_Listenradb +   
 CMAGE49b$CM\_Internetb, firth = TRUE, pl = FALSE)  
summary(CMAdjfitb)  
exp(coef(CMAdjfitb))  
round(cbind(OR = exp(coef(CMAdjfitb)), exp(confint(CMAdjfitb))), 2) # round to 2

# Maximum Likelihood Estimate

# Benin Logistic Regression

BJDHS2b$BJwt2b <- BJDHS2b$v005/1000000  
designBJ2b <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~BJwt2b, data = BJDHS2b)  
# Unadjusted   
# Age   
BJlogitAgePb <- (svyglm(BJ\_Testedb~BJAgeCatb, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitAgePb)  
coef(BJlogitAgePb)  
exp(coef(BJlogitAgePb))  
round(exp(coef(BJlogitAgePb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitAgePb)), exp(confint(BJlogitAgePb))), 2) # round to 2  
# Residential Status  
BJlogitRSPb <- (svyglm(BJ\_Testedb~v025, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitRSPb)  
coef(BJlogitRSPb)  
exp(coef(BJlogitRSPb))  
round(exp(coef(BJlogitRSPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitRSPb)), exp(confint(BJlogitRSPb))), 2) # round to 2  
# Marital Status  
BJlogitMSPb <- (svyglm(BJ\_Testedb~v502, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitMSPb)  
coef(BJlogitMSPb)  
exp(coef(BJlogitMSPb))  
round(exp(coef(BJlogitMSPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitMSPb)), exp(confint(BJlogitMSPb))), 2) # round to 2  
# Education  
BJlogitEduPb <- (svyglm(BJ\_Testedb~v106, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitEduPb)  
coef(BJlogitEduPb)  
exp(coef(BJlogitEduPb))  
round(exp(coef(BJlogitEduPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitEduPb)), exp(confint(BJlogitEduPb))), 2) # round to 2  
# Employment  
BJlogitEmpPb <- (svyglm(BJ\_Testedb~v714, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitEmpPb)  
coef(BJlogitEmpPb)  
exp(coef(BJlogitEmpPb))  
round(exp(coef(BJlogitEmpPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitEmpPb)), exp(confint(BJlogitEmpPb))), 2) # round to 2  
# Wealth Index  
BJlogitWIPb <- (svyglm(BJ\_Testedb~v190, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitWIPb)  
coef(BJlogitWIPb)  
exp(coef(BJlogitWIPb))  
round(exp(coef(BJlogitWIPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitWIPb)), exp(confint(BJlogitWIPb))), 2) # round to 2  
# Religion  
BJlogitRelPb <- (svyglm(BJ\_Testedb~BJ\_Religion2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitRelPb)  
coef(BJlogitRelPb)  
exp(coef(BJlogitRelPb))  
round(exp(coef(BJlogitRelPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitRelPb)), exp(confint(BJlogitRelPb))), 2) # round to 2  
# Smoking  
BJlogitSmkPb <- (svyglm(BJ\_Testedb~v463z, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitSmkPb)  
coef(BJlogitSmkPb)  
exp(coef(BJlogitSmkPb))  
round(exp(coef(BJlogitSmkPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitSmkPb)), exp(confint(BJlogitSmkPb))), 2) # round to 2  
# Awareness of cervical cancer/screening  
BJlogitAwaPb <- (svyglm(BJ\_Testedb~BJAScomb, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitAwaPb)  
coef(BJlogitAwaPb)  
exp(coef(BJlogitAwaPb))  
round(exp(coef(BJlogitAwaPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitAwaPb)), exp(confint(BJlogitAwaPb))), 2) # round to 2  
# Health Insurance  
BJlogitHIPb <- (svyglm(BJ\_Testedb~v481, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitHIPb)  
coef(BJlogitHIPb)  
exp(coef(BJlogitHIPb))  
round(exp(coef(BJlogitHIPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitHIPb)), exp(confint(BJlogitHIPb))), 2) # round to 2  
# getting medical help for self: getting permission to go  
BJlogitperPb <- (svyglm(BJ\_Testedb~v467b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitperPb)  
coef(BJlogitperPb)  
exp(coef(BJlogitperPb))  
round(exp(coef(BJlogitperPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitperPb)), exp(confint(BJlogitperPb))), 2) # round to 2  
# getting medical help for self: getting money needed for treatment  
BJlogitmonPb <- (svyglm(BJ\_Testedb~v467c, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitmonPb)  
coef(BJlogitmonPb)  
exp(coef(BJlogitmonPb))  
round(exp(coef(BJlogitmonPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitmonPb)), exp(confint(BJlogitmonPb))), 2) # round to 2  
# getting medical help for self: distance to health facility  
BJlogitdistPb <- (svyglm(BJ\_Testedb~v467d, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitdistPb)  
coef(BJlogitdistPb)  
exp(coef(BJlogitdistPb))  
round(exp(coef(BJlogitdistPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitdistPb)), exp(confint(BJlogitdistPb))), 2) # round to 2  
# getting medical help for self: not wanting to go alone  
BJlogitalonPb <- (svyglm(BJ\_Testedb~v467f, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitalonPb)  
coef(BJlogitalonPb)  
exp(coef(BJlogitalonPb))  
round(exp(coef(BJlogitalonPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitalonPb)), exp(confint(BJlogitalonPb))), 2) # round to 2  
# Frequency of reading newspaper or magazine  
BJlogitRnpmPb <- (svyglm(BJ\_Testedb~BJ\_News2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitRnpmPb)  
coef(BJlogitRnpmPb)  
exp(coef(BJlogitRnpmPb))  
round(exp(coef(BJlogitRnpmPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitRnpmPb)), exp(confint(BJlogitRnpmPb))), 2) # round to 2  
# Frequency of watching television  
BJlogitWtPb <- (svyglm(BJ\_Testedb~BJ\_WatchTV2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitWtPb)  
coef(BJlogitWtPb)  
exp(coef(BJlogitWtPb))  
round(exp(coef(BJlogitWtPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitWtPb)), exp(confint(BJlogitWtPb))), 2) # round to 2  
# Frequency of listening to radio   
BJlogitLrPb <- (svyglm(BJ\_Testedb~BJ\_Listenrad2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitLrPb)  
coef(BJlogitLrPb)  
exp(coef(BJlogitLrPb))  
round(exp(coef(BJlogitLrPb)), 2) # round to make BJDHS$BJ\_Occupation <- relevel(BJDHS$BJ\_Occupation, "Not working"it clearer  
round(cbind(OR = exp(coef(BJlogitLrPb)), exp(confint(BJlogitLrPb))), 2) # round to 2  
# Frequency of using Internet in last month  
BJlogitIntPb <- (svyglm(BJ\_Testedb~BJ\_Internet2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitIntPb)  
coef(BJlogitIntPb)  
exp(coef(BJlogitIntPb))  
round(exp(coef(BJlogitIntPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitIntPb)), exp(confint(BJlogitIntPb))), 2) # round to 2  
# Adjusted models  
# Significant in the Chi square  
# Model   
BJlogitPb <- (svyglm(BJ\_Testedb~v025+v106+v190+BJ\_Religion2b+BJAScomb+v467c+BJ\_News2b+BJ\_WatchTV2b+BJ\_Listenrad2b+BJ\_Internet2b, family=quasibinomial, design=designBJ2b, na.action = na.omit))  
summary(BJlogitPb)  
coef(BJlogitPb)  
exp(coef(BJlogitPb))  
round(exp(coef(BJlogitPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(BJlogitPb)), exp(confint(BJlogitPb))), 2) # round to 2

# Cameroon Logistic Regression

CMAGE49$CMwt <-CMAGE49$v005/1000000  
designCM <- svydesign(ids = ~v021+v002, strata = ~v025, weights = ~CMwt, data = CMAGE49)  
# Unadjusted   
# Age  
CMlogitAgePb <- (svyglm(CM\_Testedb~CMAgeCatb, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitAgePb)  
coef(CMlogitAgePb)  
exp(coef(CMlogitAgePb))  
round(exp(coef(CMlogitAgePb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitAgePb)), exp(confint(CMlogitAgePb))), 2) # round to 2  
# Residential Status  
CMlogitRSPb <- (svyglm(CM\_Testedb~v025, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitRSPb)  
coef(CMlogitRSPb)  
exp(coef(CMlogitRSPb))  
round(exp(coef(CMlogitRSPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitRSPb)), exp(confint(CMlogitRSPb))), 2) # round to 2  
# Marital Status  
CMlogitMSPb <- (svyglm(CM\_Testedb~v502, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitMSPb)  
coef(CMlogitMSPb)  
exp(coef(CMlogitMSPb))  
round(exp(coef(CMlogitMSPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitMSPb)), exp(confint(CMlogitMSPb))), 2) # round to 2  
# Education  
CMlogitEduPb <- (svyglm(CM\_Testedb~v106, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitEduPb)  
coef(CMlogitEduPb)  
exp(coef(CMlogitEduPb))  
round(exp(coef(CMlogitEduPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitEduPb)), exp(confint(CMlogitEduPb))), 2) # round to 2  
# Employment  
CMlogitEmpPb <- (svyglm(CM\_Testedb~v714, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitEmpPb)  
coef(CMlogitEmpPb)  
exp(coef(CMlogitEmpPb))  
round(exp(coef(CMlogitEmpPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitEmpPb)), exp(confint(CMlogitEmpPb))), 2) # round to 2  
# Wealth Index  
CMlogitWIPb <- (svyglm(CM\_Testedb~v190, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitWIPb)  
coef(CMlogitWIPb)  
exp(coef(CMlogitWIPb))  
round(exp(coef(CMlogitWIPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitWIPb)), exp(confint(CMlogitWIPb))), 2) # round to 2  
# Religion  
CMlogitRelPb <- (svyglm(CM\_Testedb~CM\_Religion2b, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitRelPb)  
coef(CMlogitRelPb)  
exp(coef(CMlogitRelPb))  
round(exp(coef(CMlogitRelPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitRelPb)), exp(confint(CMlogitRelPb))), 2) # round to 2  
#Use of Cigarette and Tobacco  
CMlogitSmkPb <- (svyglm(CM\_Testedb~v463z, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitSmkPb)  
coef(CMlogitSmkPb)  
exp(coef(CMlogitSmkPb))  
round(exp(coef(CMlogitSmkPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitSmkPb)), exp(confint(CMlogitSmkPb))), 2) # round to 2  
# Awareness of CC/S  
CMlogitAwaPb <- (svyglm(CM\_Testedb~CMAScomb, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitAwaPb)  
coef(CMlogitAwaPb)  
exp(coef(CMlogitAwaPb))  
round(exp(coef(CMlogitAwaPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitAwaPb)), exp(confint(CMlogitAwaPb))), 2) # round to 2  
# covered by health insurance  
CMlogitHIPb <- (svyglm(CM\_Testedb~v481, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitHIPb)  
coef(CMlogitHIPb)  
exp(coef(CMlogitHIPb))  
round(exp(coef(CMlogitHIPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitHIPb)), exp(confint(CMlogitHIPb))), 2) # round to 2  
# getting medical help for self: getting permission to go  
CMlogitperPb <- (svyglm(CM\_Testedb~v467b, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitperPb)  
coef(CMlogitHIPb)  
exp(coef(CMlogitperPb))  
round(exp(coef(CMlogitperPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitperPb)), exp(confint(CMlogitperPb))), 2) # round to 2  
# getting medical help for self: getting money needed for treatment  
CMlogitmonPb <- (svyglm(CM\_Testedb~v467c, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitmonPb)  
coef(CMlogitmonPb)  
exp(coef(CMlogitmonPb))  
round(exp(coef(CMlogitmonPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitmonPb)), exp(confint(CMlogitmonPb))), 2) # round to 2  
# getting medical help for self: distance to health facility  
CMlogitdistPb <- (svyglm(CM\_Testedb~v467d, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitdistPb)  
coef(CMlogitdistPb)  
exp(coef(CMlogitdistPb))  
round(exp(coef(CMlogitdistPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitdistPb)), exp(confint(CMlogitdistPb))), 2) # round to 2  
# getting medical help for self: not wanting to go alone  
CMlogitalonPb <- (svyglm(CM\_Testedb~v467f, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitalonPb)  
coef(CMlogitalonPb)  
exp(coef(CMlogitalonPb))  
round(exp(coef(CMlogitalonPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitalonPb)), exp(confint(CMlogitalonPb))), 2) # round to 2  
# Frequency of reading newspaper or magazine  
CMlogitRnpmPb <- (svyglm(CM\_Testedb~CM\_News, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitRnpmPb)  
coef(CMlogitRnpmPb)  
exp(coef(CMlogitRnpmPb))  
round(exp(coef(CMlogitRnpmPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitRnpmPb)), exp(confint(CMlogitRnpmPb))), 2) # round to 2  
# Frequency of watching television  
CMlogitWtPb <- (svyglm(CM\_Testedb~CM\_WatchTV, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitWtPb)  
coef(CMlogitWtPb)  
exp(coef(CMlogitWtPb))  
round(exp(coef(CMlogitWtPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitWtPb)), exp(confint(CMlogitWtPb))), 2) # round to 2  
# Frequency of listening to radio   
CMlogitLrPb <- (svyglm(CM\_Testedb~CM\_Listenrad, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitLrPb)  
coef(CMlogitLrPb)  
exp(coef(CMlogitLrPb))  
round(exp(coef(CMlogitLrPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitLrPb)), exp(confint(CMlogitLrPb))), 2) # round to 2  
# Frequency of using Internet in last month  
CMlogitIntPb <- (svyglm(CM\_Testedb~CM\_Internet, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitIntPb)  
coef(CMlogitIntPb)  
exp(coef(CMlogitIntPb))  
round(exp(coef(CMlogitIntPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitIntPb)), exp(confint(CMlogitIntPb))), 2) # round to 2  
# Adjusted  
# Significant in the Chi square  
# Model   
CMlogitPb <- (svyglm(CM\_Testedb~CMAgeCatb+v025+v106+v190+CM\_Religion2b+CMAScomb+v481+v467b+v467c+v467d+v467f+CM\_News+CM\_WatchTV+CM\_Listenrad+CM\_Internet, family=quasibinomial, design=designCMb, na.action = na.omit))  
summary(CMlogitPb)  
coef(CMlogitPb)  
exp(coef(CMlogitPb))  
round(exp(coef(CMlogitPb)), 2) # round to make it clearer  
round(cbind(OR = exp(coef(CMlogitPb)), exp(confint(CMlogitPb))), 2) # round to 2

sessionInfo()

## R version 4.1.1 (2021-08-10)  
## Platform: x86\_64-w64-mingw32/x64 (64-bit)  
## Running under: Windows 10 x64 (build 19045)  
##   
## Matrix products: default  
##   
## locale:  
## [1] LC\_COLLATE=English\_Nigeria.1252 LC\_CTYPE=English\_Nigeria.1252   
## [3] LC\_MONETARY=English\_Nigeria.1252 LC\_NUMERIC=C   
## [5] LC\_TIME=English\_Nigeria.1252   
##   
## attached base packages:  
## [1] stats graphics grDevices utils datasets methods base   
##   
## loaded via a namespace (and not attached):  
## [1] compiler\_4.1.1 fastmap\_1.1.0 cli\_3.4.1 tools\_4.1.1   
## [5] htmltools\_0.5.2 rstudioapi\_0.15.0 yaml\_2.3.7 rmarkdown\_2.25   
## [9] knitr\_1.44 xfun\_0.40 digest\_0.6.28 rlang\_1.1.1   
## [13] evaluate\_0.22