APdata_analysisMW

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```
load('final_df.Rdata')
```

```
final_df <- final_df %>%
  mutate(pre_htn = as.factor(pre_htn)) %>%
  mutate(post_htn = as.factor(post_htn), levels(c('yes','no'))) %>%
  mutate(bmi_return = as.factor(bmi_return)) %>%
  mutate(gest_age_wks = as.numeric(gest_age_wks)) %>%
  mutate(ob_gravidity = as.character(ob_gravidity)) %>%
  mutate(ob_gravidity = as.factor(ob_gravidity)) %>%
  mutate(ob_parity = as.character(ob_parity)) %>%
  mutate(ob_parity = as.factor(ob_parity)) %>%
  mutate(ob_multiple_births = as.character(ob_multiple_births)) %>%
  mutate(ob_multiple_births = as.factor(ob_multiple_births)) %>%
  filter(delivery_method != 'Other') %>%
  mutate(delivery_method = as.character(delivery_method)) %>%
  mutate(delivery_method = as.factor(delivery_method)) %>%
  mutate(ob_gravidity = factor(ob_gravidity, levels = c(1,
                                                        2,
                                                        3,
                                                        4,
                                                        5,
                                                        6,
                                                        7,
                                                        8,
                                                        9,
                                                        10,
                                                        11,
                                                        12,
                                                        13,
                                                        14,
                                                        15,
                                                        16,
                                                        17,
                                                        18))) %>%
  mutate(ob_parity = factor(ob_parity, levels = c(1,
                                                  2,
                                                  3,
                                                  4,
                                                  5,
                                                  6,
                                                  7,
                                                  8,
```

```
                                                  9,
                                                  10,
                                                  11,
                                                  12))) %>%
  mutate(post_htn = case_when(
    post_htn == 'no' ~ 0,
    post_htn == 'yes' ~ 1
  )) %>%
  mutate(post_htn = as.factor(post_htn))
```

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```
final_df %>%
  select(mom_age_at_del,
         mom_race,
         mom_ethnicity,
         mom_marital_status,
         employment_status,
         preeclampsia,
         pregest_dm,
         gestational_dm,
         placental_abruption,
         maternal_dvt,
         gest_age_wks,
         delivery_method,
         #ob_gravidity,
         #ob_parity,
         ob_multiple_births,
         baby_count,
         mean_pre_bmi,
         mean_post_bmi,
         bmi_return
  ) %>%
  tbl_summary(
    by = bmi_return,
    missing_text = 'Missing'
  ) %>%
  add_p() %>%
  modify_header(label = "**Variable**") %>%
  bold_labels()
```

```
## 11553 observations missing `bmi_return` have been removed. To include these observations, use `forca

## Table printed with `knitr::kable()`, not {gt}. Learn why at
## https://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html
## To suppress this message, include `message = FALSE` in code chunk header.
```

Variable	**no**, N = 3,059	**yes**, N = 4,299	**p-value**
mom_age_at_del	29.0 (25.0, 33.0)	30.0 (27.0, 33.0)	<0.001
mom_race			<0.001
Black or African American	762 (25%)	654 (15%)	

Variable	**no**, N = 3,059	**yes**, N = 4,299	**p-value**
Other	305 (10%)	369 (8.6%)	
White or Caucasian	1,975 (65%)	3,262 (76%)	
Missing	17	14	
mom_ethnicity			0.049
Hispanic	179 (5.9%)	206 (4.8%)	
NH	2,875 (94%)	4,084 (95%)	
Other	0 (0%)	0 (0%)	
Missing	5	9	
mom_marital_status			<0.001
Divorced	113 (3.7%)	129 (3.0%)	
Married	1,798 (59%)	3,129 (73%)	
Other	82 (2.7%)	64 (1.5%)	
Single	1,065 (35%)	976 (23%)	
Missing	1	1	
employment_status			<0.001
Full Time	1,661 (54%)	2,530 (59%)	
Not Employed	850 (28%)	968 (23%)	
Other	132 (4.3%)	206 (4.8%)	
Part Time	409 (13%)	583 (14%)	
Missing	7	12	
preeclampsia	258 (8.4%)	365 (8.5%)	>0.9
pregest_dm	5 (0.2%)	3 (<0.1%)	0.3
gestational_dm	57 (1.9%)	52 (1.2%)	0.022
placental_abruption	29 (0.9%)	41 (1.0%)	>0.9
maternal_dvt	0 (0%)	0 (0%)	>0.9
gest_age_wks	39.00 (37.57, 39.71)	39.14 (38.29, 40.00)	<0.001
Missing	85	114	
delivery_method			0.2
C-Section	885 (29%)	1,220 (28%)	
Operative Vaginal	138 (4.5%)	233 (5.4%)	
Vaginal	2,036 (67%)	2,846 (66%)	
ob_multiple_births			0.8
0	2,719 (96%)	3,769 (96%)	
1	111 (3.9%)	140 (3.6%)	
2	3 (0.1%)	3 (<0.1%)	
3	0 (0%)	1 (<0.1%)	
Missing	226	386	
baby_count			0.8
1	3,002 (98%)	4,220 (98%)	
2	55 (1.8%)	78 (1.8%)	
3	2 (<0.1%)	1 (<0.1%)	
mean_pre_bmi	31 (26, 36)	28 (25, 32)	<0.001
mean_post_bmi	32 (27, 38)	25 (22, 29)	<0.001

```
unweighted_mod <- glm(
   post_htn ~
    bmi_return +
    mom_age_at_del +
    mom_race +
    mom_ethnicity +
    mom_marital_status +
```

```
    employment_status +
    preeclampsia +
    pregest_dm +
    gestational_dm +
    placental_abruption +
    #maternal_dvt #+ # not enough obs
    gest_age_wks +
    delivery_method +
    ob_gravidity +
    ob_parity +
    ob_multiple_births +
    baby_count +
    mean_pre_bmi
    #mean_post_bmi not converging
  ,
  data = final_df,
  family = binomial(link = "logit"))

summary(unweighted_mod)
```

```
##
## Call:
## glm(formula = post_htn ~ bmi_return + mom_age_at_del + mom_race +
##     mom_ethnicity + mom_marital_status + employment_status +
##     preeclampsia + pregest_dm + gestational_dm + placental_abruption +
##     gest_age_wks + delivery_method + ob_gravidity + ob_parity +
##     ob_multiple_births + baby_count + mean_pre_bmi, family = binomial(link = "logit"),
##     data = final_df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7369   0.2859   0.3827   0.5225   5.3024
##
## Coefficients:
##                                   Estimate Std. Error z value Pr(>|z|)
## (Intercept)                      1.780e+00  7.096e-01   2.508   0.0121 *
## bmi_returnyes                    3.566e-01  8.091e-02   4.408 1.05e-05 ***
## mom_age_at_del                  -8.290e-02  8.588e-03  -9.653  < 2e-16 ***
## mom_raceOther                    4.351e-01  1.715e-01   2.537   0.0112 *
## mom_raceWhite or Caucasian       6.551e-01  1.135e-01   5.774 7.76e-09 ***
## mom_ethnicityNH                  1.605e-01  1.906e-01   0.842   0.3997
## mom_marital_statusMarried        3.944e-01  1.989e-01   1.983   0.0474 *
## mom_marital_statusOther          3.325e-01  3.407e-01   0.976   0.3290
## mom_marital_statusSingle         6.896e-02  2.080e-01   0.332   0.7402
## employment_statusNot Employed   -1.888e-01  9.519e-02  -1.984   0.0473 *
## employment_statusOther          -3.648e-01  1.709e-01  -2.134   0.0328 *
## employment_statusPart Time       3.743e-02  1.263e-01   0.296   0.7670
## preeclampsiaYes                 -1.595e+00  1.087e-01 -14.676  < 2e-16 ***
## pregest_dmYes                    5.801e-01  1.106e+00   0.525   0.5999
## gestational_dmYes               -1.419e-01  2.737e-01  -0.518   0.6043
## placental_abruptionYes           4.112e-01  3.980e-01   1.033   0.3016
## gest_age_wks                     7.023e-02  1.196e-02   5.873 4.27e-09 ***
## delivery_methodOperative Vaginal 2.043e-01  2.164e-01   0.944   0.3451
```

```
## delivery_methodVaginal            1.733e-01  8.611e-02   2.012   0.0442 *
## ob_gravidity2                    -8.435e-02  1.297e-01  -0.650   0.5155
## ob_gravidity3                    -8.390e-02  1.569e-01  -0.535   0.5928
## ob_gravidity4                    -2.616e-01  1.828e-01  -1.431   0.1525
## ob_gravidity5                    -3.566e-01  2.177e-01  -1.638   0.1014
## ob_gravidity6                    -4.242e-01  2.682e-01  -1.582   0.1137
## ob_gravidity7                    -7.151e-01  3.314e-01  -2.158   0.0309 *
## ob_gravidity8                     4.185e-01  5.022e-01   0.833   0.4047
## ob_gravidity9                    -4.389e-01  4.951e-01  -0.886   0.3754
## ob_gravidity10                   -1.582e-01  8.690e-01  -0.182   0.8556
## ob_gravidity11                   -1.175e+00  8.398e-01  -1.399   0.1619
## ob_gravidity12                    1.148e+01  4.808e+02   0.024   0.9809
## ob_gravidity13                    3.445e-01  1.700e+00   0.203   0.8394
## ob_gravidity15                    1.224e+01  8.827e+02   0.014   0.9889
## ob_gravidity17                    1.260e+01  8.827e+02   0.014   0.9886
## ob_parity2                       -8.917e-02  1.267e-01  -0.704   0.4815
## ob_parity3                       -6.279e-02  1.674e-01  -0.375   0.7075
## ob_parity4                       -4.223e-02  2.191e-01  -0.193   0.8472
## ob_parity5                        1.481e-01  3.250e-01   0.456   0.6487
## ob_parity6                        2.320e-01  4.360e-01   0.532   0.5946
## ob_parity7                       -7.547e-01  5.995e-01  -1.259   0.2080
## ob_parity8                        3.223e-02  9.067e-01   0.036   0.9716
## ob_parity9                        8.672e-01  1.303e+00   0.665   0.5057
## ob_parity10                       1.163e+01  5.697e+02   0.020   0.9837
## ob_parity11                       1.464e+01  8.827e+02   0.017   0.9868
## ob_parity12                      -2.521e+01  1.005e+03  -0.025   0.9800
## ob_multiple_births1              -3.850e-01  2.326e-01  -1.655   0.0978 .
## ob_multiple_births2              -6.724e-01  1.252e+00  -0.537   0.5913
## ob_multiple_births3               1.142e+01  8.827e+02   0.013   0.9897
## baby_count                        7.552e-01  3.138e-01   2.406   0.0161 *
## mean_pre_bmi                     -5.335e-02  5.164e-03 -10.332  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 5211.1  on 6336  degrees of freedom
## Residual deviance: 4373.0  on 6288  degrees of freedom
##   (12574 observations deleted due to missingness)
## AIC: 4471
##
## Number of Fisher Scoring iterations: 13
```

```
unweighted_mod2 <- glm(
  post_htn ~
    bmi_return +
    mom_age_at_del +
    mom_race +
    mom_ethnicity +
    mom_marital_status +
    employment_status +
    preeclampsia +
    pregest_dm +
    gestational_dm +
```

```
    placental_abruption +
    #maternal_dvt #+ # not enough obs
    gest_age_wks +
    delivery_method +
    ob_gravidity +
    ob_parity +
    ob_multiple_births +
    baby_count +
    mean_pre_bmi
    #mean_post_bmi not converging
  ,
  data = unweighted_mod$model,
  family = binomial(link = "logit"))

step_unweight2 <- step(unweighted_mod2)
```

```
## Start:  AIC=4471.02
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + pregest_dm +
##     gestational_dm + placental_abruption + gest_age_wks + delivery_method +
##     ob_gravidity + ob_parity + ob_multiple_births + baby_count +
##     mean_pre_bmi
##
##                       Df Deviance    AIC
## - ob_gravidity        14   4385.5 4455.5
## - ob_parity           11   4380.1 4456.1
## - ob_multiple_births   3   4376.0 4468.0
## - gestational_dm       1   4373.3 4469.3
## - pregest_dm           1   4373.3 4469.3
## - mom_ethnicity        1   4373.7 4469.7
## - placental_abruption  1   4374.2 4470.2
## <none>                     4373.0 4471.0
## - delivery_method      2   4377.2 4471.2
## - employment_status    3   4381.0 4473.0
## - baby_count           1   4378.9 4474.9
## - mom_marital_status   3   4384.3 4476.3
## - bmi_return           1   4392.4 4488.4
## - mom_race             2   4406.4 4500.4
## - gest_age_wks         1   4405.9 4501.9
## - mom_age_at_del       1   4467.1 4563.1
## - mean_pre_bmi         1   4481.6 4577.6
## - preeclampsia         1   4575.0 4671.0
##
## Step:  AIC=4455.54
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + pregest_dm +
##     gestational_dm + placental_abruption + gest_age_wks + delivery_method +
##     ob_parity + ob_multiple_births + baby_count + mean_pre_bmi
##
##                       Df Deviance    AIC
## - ob_parity           11   4398.6 4446.6
## - ob_multiple_births   3   4388.4 4452.4
## - pregest_dm           1   4385.9 4453.9
```

```
## - gestational_dm       1   4385.9 4453.9
## - mom_ethnicity        1   4386.4 4454.4
## - placental_abruption  1   4386.9 4454.9
## <none>                     4385.5 4455.5
## - delivery_method      2   4390.4 4456.4
## - employment_status    3   4393.1 4457.1
## - baby_count           1   4391.3 4459.3
## - mom_marital_status   3   4397.4 4461.4
## - bmi_return           1   4405.3 4473.3
## - mom_race             2   4420.5 4486.5
## - gest_age_wks         1   4418.9 4486.9
## - mom_age_at_del       1   4490.9 4558.9
## - mean_pre_bmi         1   4495.2 4563.2
## - preeclampsia         1   4588.0 4656.0
##
## Step:  AIC=4446.59
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + pregest_dm +
##     gestational_dm + placental_abruption + gest_age_wks + delivery_method +
##     ob_multiple_births + baby_count + mean_pre_bmi
##
##                       Df Deviance    AIC
## - ob_multiple_births   3   4402.2 4444.2
## - gestational_dm       1   4398.9 4444.9
## - pregest_dm           1   4399.0 4445.0
## - mom_ethnicity        1   4399.7 4445.7
## - placental_abruption  1   4399.8 4445.8
## <none>                     4398.6 4446.6
## - delivery_method      2   4402.7 4446.7
## - employment_status    3   4408.5 4450.5
## - baby_count           1   4404.8 4450.8
## - mom_marital_status   3   4412.1 4454.1
## - bmi_return           1   4419.0 4465.0
## - gest_age_wks         1   4432.3 4478.3
## - mom_race             2   4442.4 4486.4
## - mean_pre_bmi         1   4510.5 4556.5
## - mom_age_at_del       1   4543.5 4589.5
## - preeclampsia         1   4594.8 4640.8
##
## Step:  AIC=4444.23
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + pregest_dm +
##     gestational_dm + placental_abruption + gest_age_wks + delivery_method +
##     baby_count + mean_pre_bmi
##
##                       Df Deviance    AIC
## - gestational_dm       1   4402.5 4442.5
## - pregest_dm           1   4402.6 4442.6
## - placental_abruption  1   4403.2 4443.2
## - mom_ethnicity        1   4403.4 4443.4
## <none>                     4402.2 4444.2
## - delivery_method      2   4406.5 4444.5
## - baby_count           1   4405.3 4445.3
## - employment_status    3   4412.6 4448.6
```

```
## - mom_marital_status   3   4415.6 4451.6
## - bmi_return           1   4422.7 4462.7
## - gest_age_wks         1   4436.8 4476.8
## - mom_race             2   4446.9 4484.9
## - mean_pre_bmi         1   4513.8 4553.8
## - mom_age_at_del       1   4550.6 4590.6
## - preeclampsia         1   4598.6 4638.6
##
## Step:  AIC=4442.48
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + pregest_dm +
##     placental_abruption + gest_age_wks + delivery_method + baby_count +
##     mean_pre_bmi
##
##                       Df Deviance    AIC
## - pregest_dm           1   4402.9 4440.9
## - placental_abruption  1   4403.5 4441.5
## - mom_ethnicity        1   4403.6 4441.6
## <none>                     4402.5 4442.5
## - delivery_method      2   4406.7 4442.7
## - baby_count           1   4405.5 4443.5
## - employment_status    3   4412.9 4446.9
## - mom_marital_status   3   4416.0 4450.0
## - bmi_return           1   4423.1 4461.1
## - gest_age_wks         1   4437.0 4475.0
## - mom_race             2   4447.0 4483.0
## - mean_pre_bmi         1   4514.6 4552.6
## - mom_age_at_del       1   4551.6 4589.6
## - preeclampsia         1   4598.7 4636.7
##
## Step:  AIC=4440.89
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + placental_abruption +
##     gest_age_wks + delivery_method + baby_count + mean_pre_bmi
##
##                       Df Deviance    AIC
## - placental_abruption  1   4403.9 4439.9
## - mom_ethnicity        1   4404.0 4440.0
## <none>                     4402.9 4440.9
## - delivery_method      2   4407.1 4441.1
## - baby_count           1   4405.9 4441.9
## - employment_status    3   4413.3 4445.3
## - mom_marital_status   3   4416.5 4448.5
## - bmi_return           1   4423.4 4459.4
## - gest_age_wks         1   4437.4 4473.4
## - mom_race             2   4447.2 4481.2
## - mean_pre_bmi         1   4515.0 4551.0
## - mom_age_at_del       1   4552.2 4588.2
## - preeclampsia         1   4598.8 4634.8
##
## Step:  AIC=4439.89
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_ethnicity +
##     mom_marital_status + employment_status + preeclampsia + gest_age_wks +
##     delivery_method + baby_count + mean_pre_bmi
```

```
##
##                       Df Deviance    AIC
## - mom_ethnicity        1   4405.0 4439.0
## - delivery_method      2   4407.9 4439.9
## <none>                     4403.9 4439.9
## - baby_count           1   4406.8 4440.8
## - employment_status    3   4414.3 4444.3
## - mom_marital_status   3   4417.3 4447.3
## - bmi_return           1   4424.5 4458.5
## - gest_age_wks         1   4437.7 4471.7
## - mom_race             2   4448.1 4480.1
## - mean_pre_bmi         1   4517.2 4551.2
## - mom_age_at_del       1   4552.9 4586.9
## - preeclampsia         1   4599.9 4633.9
##
## Step:  AIC=4439.05
## post_htn ~ bmi_return + mom_age_at_del + mom_race + mom_marital_status +
##     employment_status + preeclampsia + gest_age_wks + delivery_method +
##     baby_count + mean_pre_bmi
##
##                       Df Deviance    AIC
## <none>                     4405.0 4439.0
## - delivery_method      2   4409.1 4439.1
## - baby_count           1   4408.0 4440.0
## - employment_status    3   4415.5 4443.5
## - mom_marital_status   3   4419.3 4447.3
## - bmi_return           1   4425.7 4457.7
## - gest_age_wks         1   4439.2 4471.2
## - mom_race             2   4448.4 4478.4
## - mean_pre_bmi         1   4520.6 4552.6
## - mom_age_at_del       1   4553.0 4585.0
## - preeclampsia         1   4600.8 4632.8
```

```
summary(step_unweight2)
```

```
##
## Call:
## glm(formula = post_htn ~ bmi_return + mom_age_at_del + mom_race +
##     mom_marital_status + employment_status + preeclampsia + gest_age_wks +
##     delivery_method + baby_count + mean_pre_bmi, family = binomial(link = "logit"),
##     data = unweighted_mod$model)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.7474   0.2913   0.3884   0.5226   5.4027
##
## Coefficients:
##                                  Estimate Std. Error z value Pr(>|z|)
## (Intercept)                     2.3786585  0.6538074   3.638 0.000275 ***
## bmi_returnyes                   0.3645681  0.0802354   4.544 5.53e-06 ***
## mom_age_at_del                 -0.0928983  0.0077380 -12.005  < 2e-16 ***
## mom_raceOther                   0.4242112  0.1530555   2.772 0.005578 **
## mom_raceWhite or Caucasian      0.7184014  0.1091830   6.580 4.71e-11 ***
## mom_marital_statusMarried       0.4380126  0.1944887   2.252 0.024314 *
```

```
## mom_marital_statusOther           0.3149422  0.3364554   0.936 0.349243
## mom_marital_statusSingle          0.0768532  0.2049372   0.375 0.707654
## employment_statusNot Employed    -0.2236321  0.0931632  -2.400 0.016376 *
## employment_statusOther           -0.4183186  0.1688414  -2.478 0.013228 *
## employment_statusPart Time        0.0005067  0.1254013   0.004 0.996776
## preeclampsiaYes                  -1.5479568  0.1068661 -14.485  < 2e-16 ***
## gest_age_wks                      0.0711114  0.0118007   6.026 1.68e-09 ***
## delivery_methodOperative Vaginal  0.2776892  0.2153825   1.289 0.197299
## delivery_methodVaginal            0.1535456  0.0846024   1.815 0.069538 .
## baby_count                        0.4102919  0.2445956   1.677 0.093458 .
## mean_pre_bmi                     -0.0545407  0.0051104 -10.673  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 5211.1  on 6336  degrees of freedom
## Residual deviance: 4405.0  on 6320  degrees of freedom
## AIC: 4439
##
## Number of Fisher Scoring iterations: 5
```

```
tbl_regression(step_unweight2, exponentiate = T)
```

```
## Table printed with `knitr::kable()`, not {gt}. Learn why at
## https://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html
## To suppress this message, include `message = FALSE` in code chunk header.
```

Characteristic	**OR**	**95% CI**	**p-value**
bmi_return			
no	—	—	
yes	1.44	1.23, 1.69	<0.001
mom_age_at_del	0.91	0.90, 0.93	<0.001
mom_race			
Black or African American	—	—	
Other	1.53	1.14, 2.07	0.006
White or Caucasian	2.05	1.66, 2.54	<0.001
mom_marital_status			
Divorced	—	—	
Married	1.55	1.05, 2.25	0.024
Other	1.37	0.72, 2.70	0.3
Single	1.08	0.72, 1.60	0.7
employment_status			
Full Time	—	—	
Not Employed	0.80	0.67, 0.96	0.016
Other	0.66	0.48, 0.92	0.013
Part Time	1.00	0.79, 1.28	>0.9
preeclampsia			
No	—	—	
Yes	0.21	0.17, 0.26	<0.001
gest_age_wks	1.07	1.05, 1.10	<0.001
delivery_method			

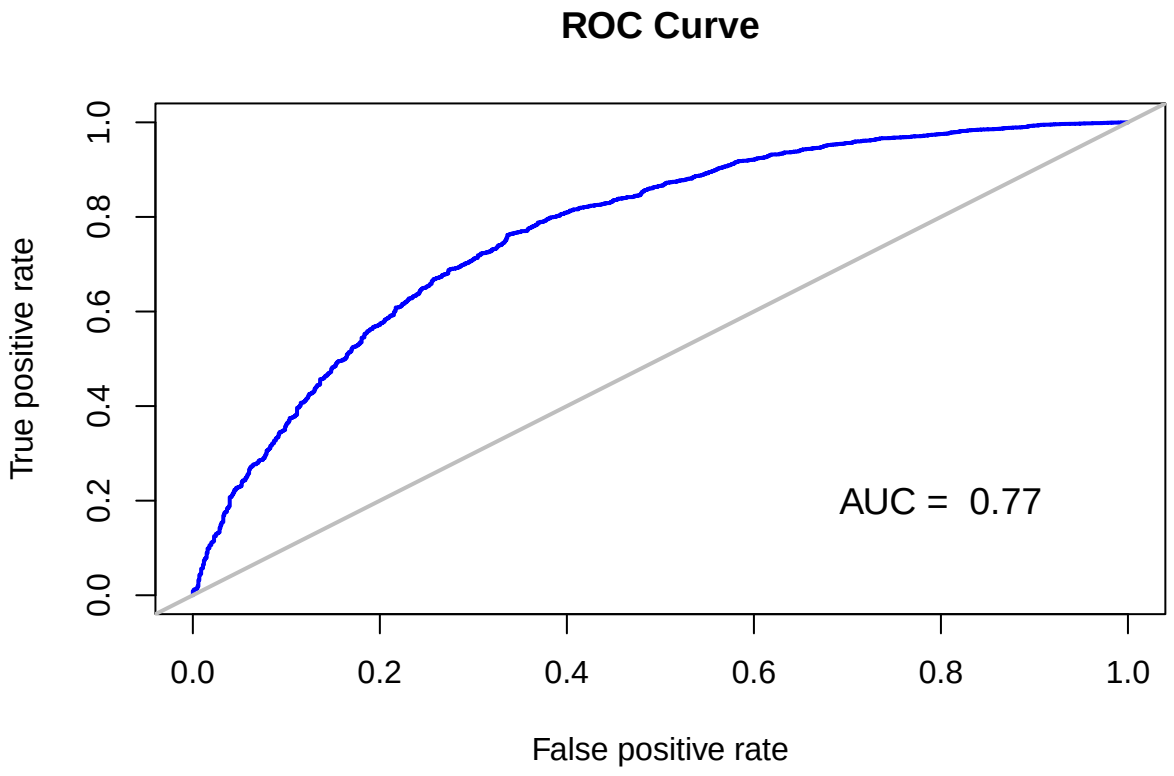
Characteristic	OR	95% CI	p-value
C-Section	—	—	
Operative Vaginal	1.32	0.88, 2.05	0.2
Vaginal	1.17	0.99, 1.38	0.070
baby_count	1.51	0.95, 2.48	0.093
mean_pre_bmi	0.95	0.94, 0.96	<0.001

ROC/AUC

```
final_df$predicted <- predict(step_unweight2, newdata = final_df, type="response")

final_df_pred <- final_df[complete.cases(final_df[, c("predicted", "post_htn")]),]

pred <- prediction(final_df_pred$predicted, final_df_pred$post_htn)
perf <- performance(pred, "tpr", "fpr")

auc <- as.numeric(performance(pred, measure = "auc")@y.values)
auc
```

```
## [1] 0.7719156
```

```
plot(perf, main="ROC Curve", col="blue", lwd=2, xlim=c(0,1), ylim=c(0,1))
abline(0,1, lwd=2, col="gray")
text(0.8, 0.2, paste("AUC = ", round(auc, 2)), cex = 1.2)
```



data dictionary:

patient_num: *integer* unique to each patient

dx_code: *character* ICD-10 code for the diagnosis of hypertension if applicable, I10

htn_dx_date: *date* shifted date of patient diagnosis of hypertension if applicable, shifted by ± 10 days

pre_htn: *factor* yes if patient was diagnosed w/ hypertension before 12 months post-delivery, no if not

post_htn: *factor* yes if patient was diagnosed w/ hypertension between 13-72 months post-delivery, no if not

mom_admit_dttm_shifted: *date* date of the mother's delivery admission

mom_disch_dttm_shifted: *date* date of the mother's delivery discharge

mom_los: *integer* mom's length of stay in days for the delivery encounter

mom_age_at_del: *date* mom's age at delivery in years

mom_marital_status: *factor* mom's current marital status: Divorced, Married, Other, Single

mom_race: *factor* mom's current race: Black or African American, Other, White or Caucasian

mom_ethnicity: *factor* mom's current ethnicity: Hispanic, NH (non-hispanic), Other

mom_wt_oz: *numeric* most recent mother weight up to delivery

mom_bmi: *numeric* most recent mother BMI up to delivery

preeclampsia: *factor* indicates presence of a preeclampsia diagnosis on the delivery encounter

pregest_dm: *factor* indicates presence of a pregestational diabetes diagnosis on the delivery encounter

gestational_dm: *factor* indicates presence of a gestational diabetes diagnosis on the delivery encounter

placental_abruption: *factor* indicates presence of a placental abruption diagnosis on the delivery encounter

maternal_dvt: *factor* indicates presence of a maternal deep vein thrombosis diagnosis on the delivery encounter

baby_patient_num: *integer* Masked MRN, the i2b2 patient number

baby_yob_shifted: *date* Baby's year of birth

baby_dob_shifted: *date* Baby's date of birth

baby_dod_shifted: *date* Baby's date of death

baby_admit_dttm_shifted: *date* Date of the baby's birth admission

baby_disch_dttm_shifted: *date* Date of the baby's birth discharge

baby_birth_ht_in: *numeric* Baby's birth height in inches

baby_birth_wt_oz: *numeric* Baby's birth weight in ounces

baby_birth_wt_gms: *numeric* Baby's birth weight in grams

gest_age_wks: *numeric* Baby's gestational age in weeks and days divided 7

delivery_method: *factor* Name of the delivery method used for the birth: C-Section, Operative Vaginal, Vaginal, Other (not included in analyses)

baby_sex: *factor* baby's current sex, male or female

baby_race: *factor* baby's current race: Black or African American, Other, White or Caucasian

baby_ethnicity: *factor* baby's current ethnicity: Hispanic, NH (non-hispanic), Other

ob_gravidity: *factor* Number of pregnancies documented on the first OB visit up to 90 days after the delivery

ob_parity: *factor* Number of viable offspring documented on the first OB visit up to 90 days after the delivery

ob_multiple_births: *factor* Number of multiple births documented on the first OB visit up to 90 days after the delivery

mom_ht_cm: *numeric* mom's height in centimeters

baby_count: *integer* number of babies birthed in most recent birth

diff_htn: *numeric* number of days between diagnosis of hypertension and baby DOB

measure_date_shifted: *date* date of mom's BMI measurement

highest_diastolic: *numeric* mom's diastolic component of highest blood pressure up to delivery

highest_systolic: *date* mom's systolic component of highest blood pressure up to delivery

post_bmi_date: *date* date of post-delivery BMI measurement

pre_bmi_date: *date* date of pre-delivery BMI measurement

mean_pre_bmi: *numeric* averaged BMI measured pre-delivery

mean_post_bmi: *numeric* averaged BMI measured post-delivery

birth_date_shifted: *date* mom's birth date

employment_status: *factor* mom's current employment status: Full Time, Part Time, Not Employed, Other

bmi_return: *factor* yes if mom returned to pre-delivery BMI, no if post-delivery BMI was at least 1 point higher than pre-delivery BMI