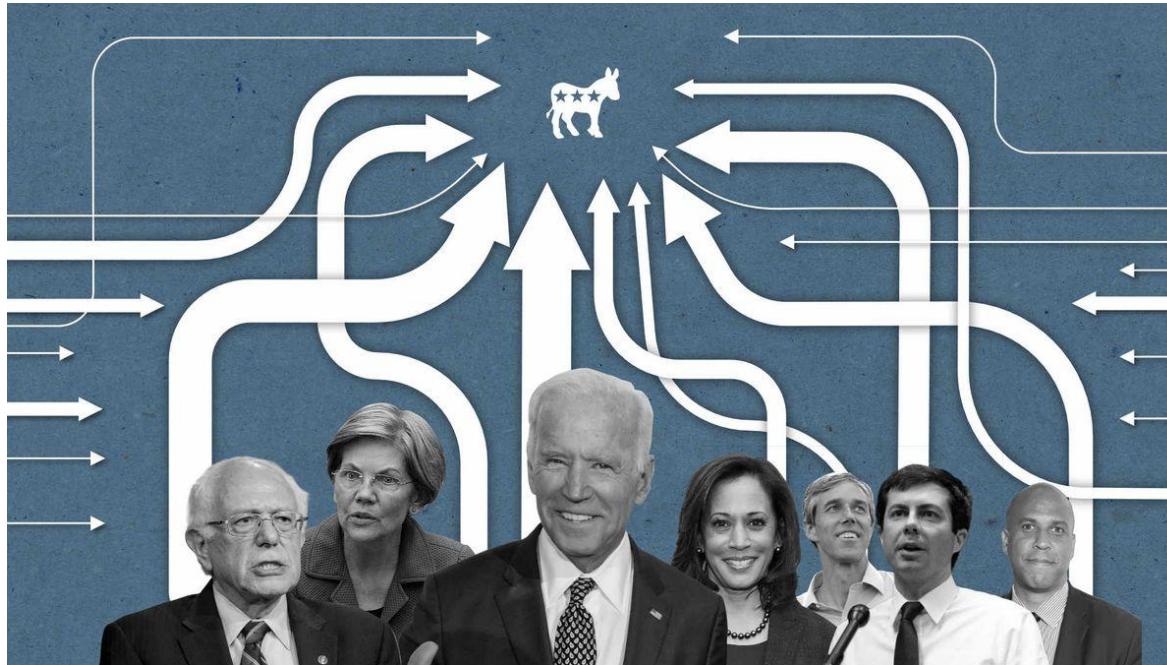
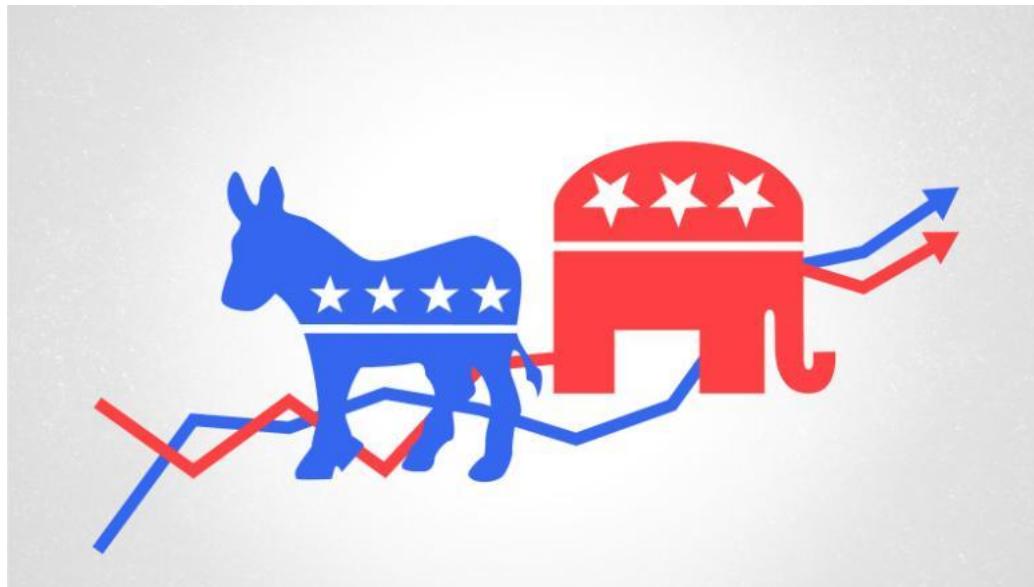


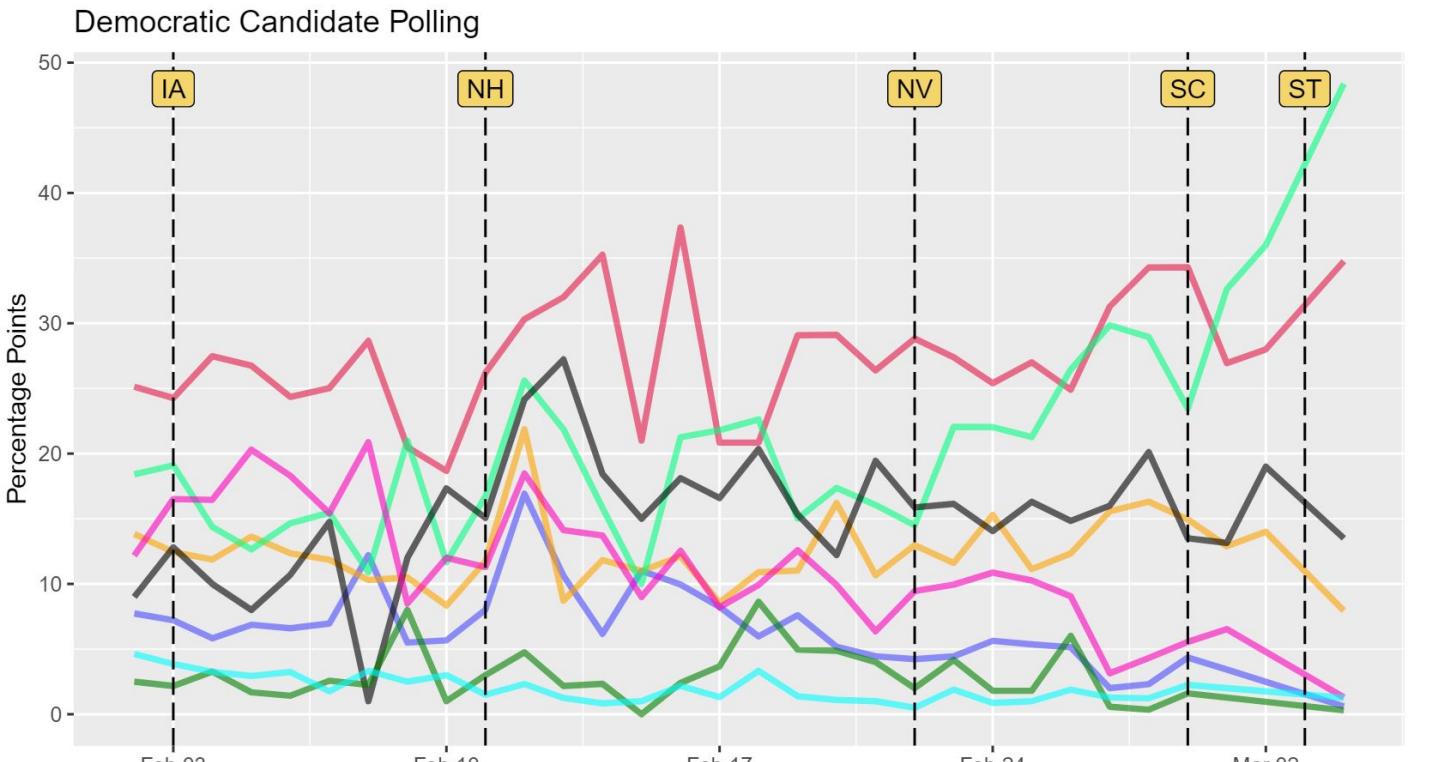
# Democratic Presidential Nomination 2020

Presenters: Brad Reeves, Cheng Su, Paul Collet, Tin Nguyen



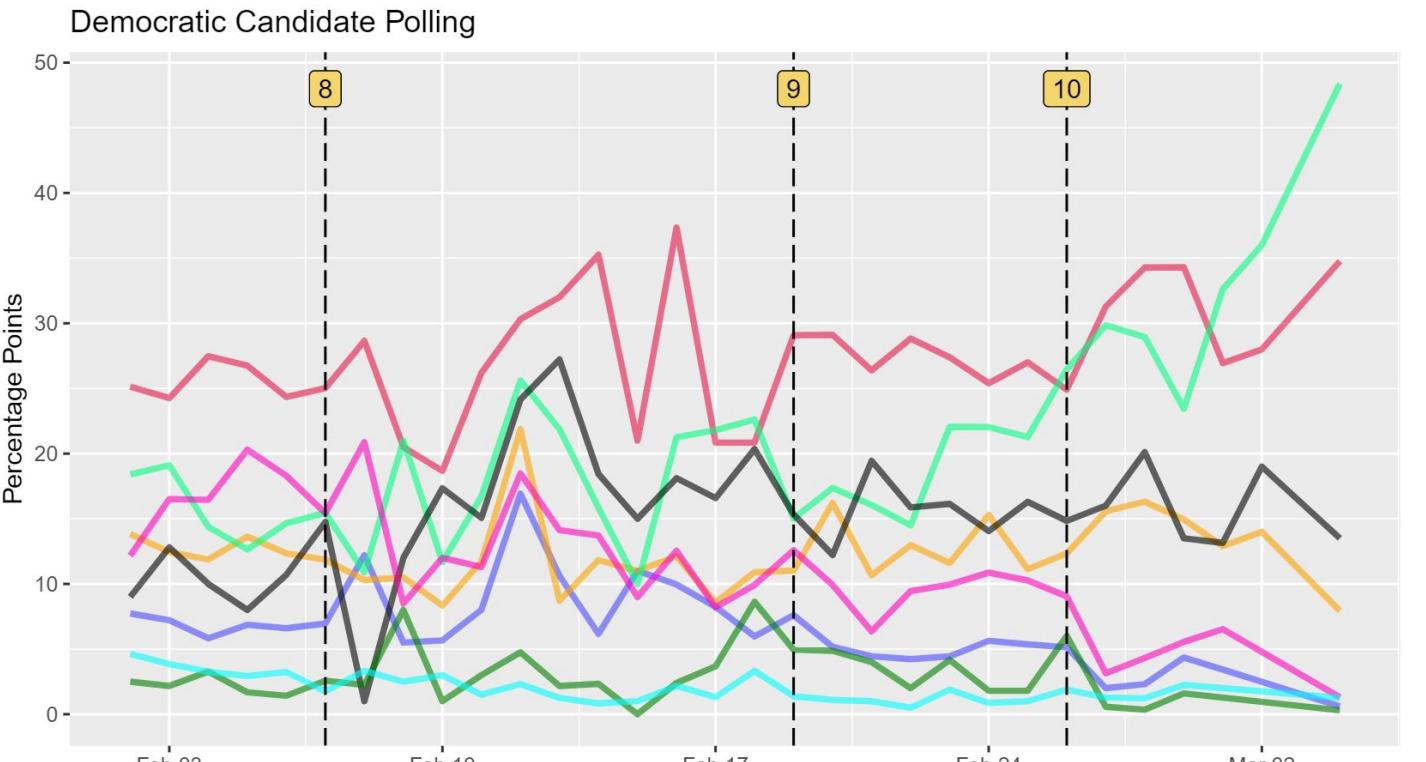
# Democratic Primaries: Polls





- Candidate
- Amy Klobuchar
  - Bernard Sanders
  - Elizabeth Warren
  - Joseph R. Biden Jr.
  - Michael Bloomberg
  - Pete Buttigieg
  - Tom Steyer
  - Tulsi Gabbard

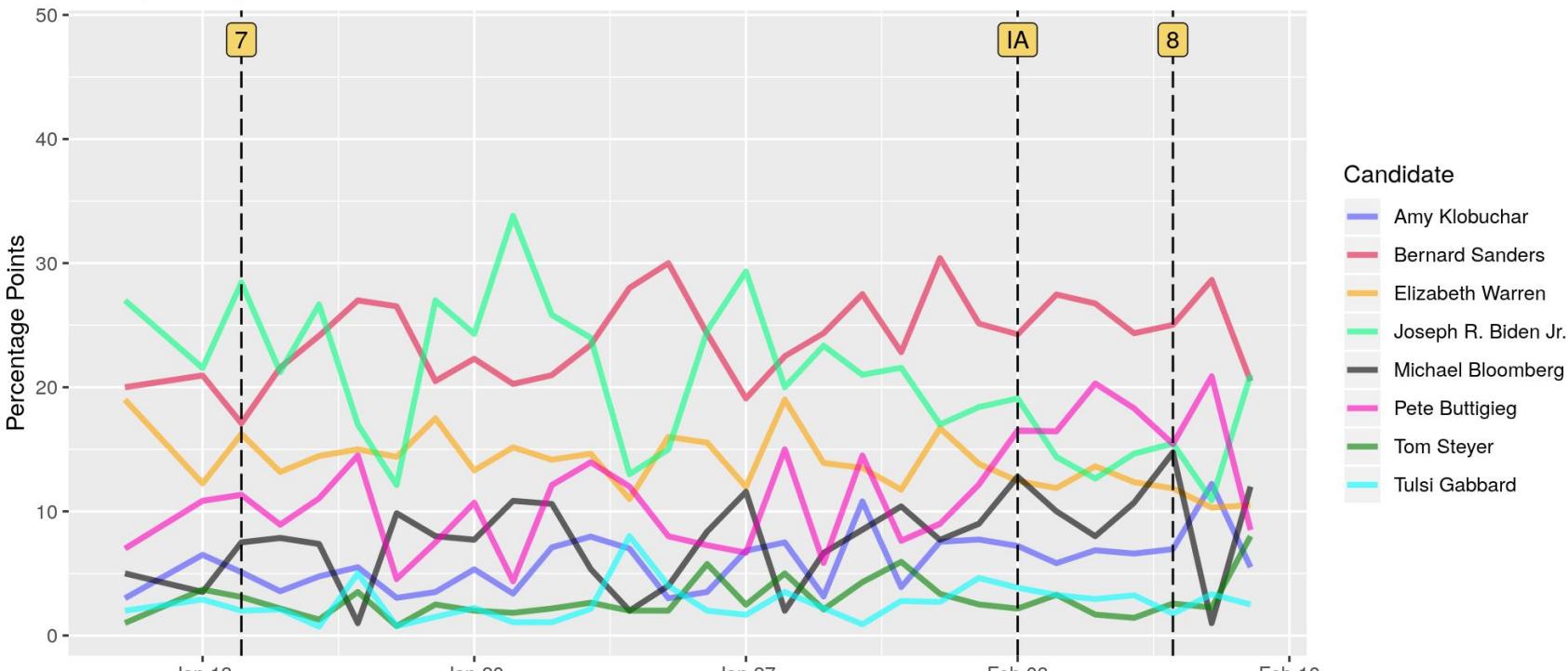
Data: [www.fivethirtyeight.com](http://www.fivethirtyeight.com) (as of 03/05/2020 )



Data: [www.fivethirtyeight.com](http://www.fivethirtyeight.com) (as of 03/05/2020 )



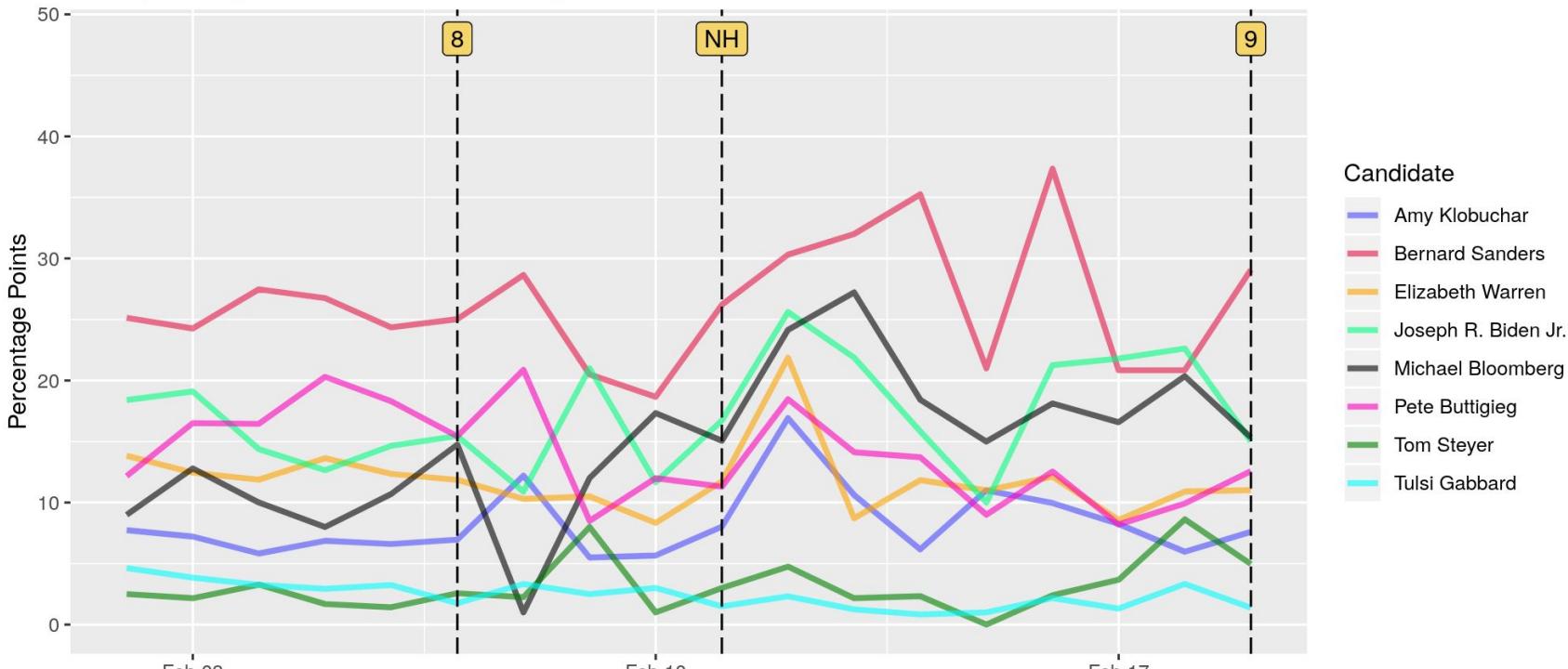
## Polling During Iowa Caucus



Data: [www.fivethirtyeight.com](http://www.fivethirtyeight.com) (as of 03/06/2020 )



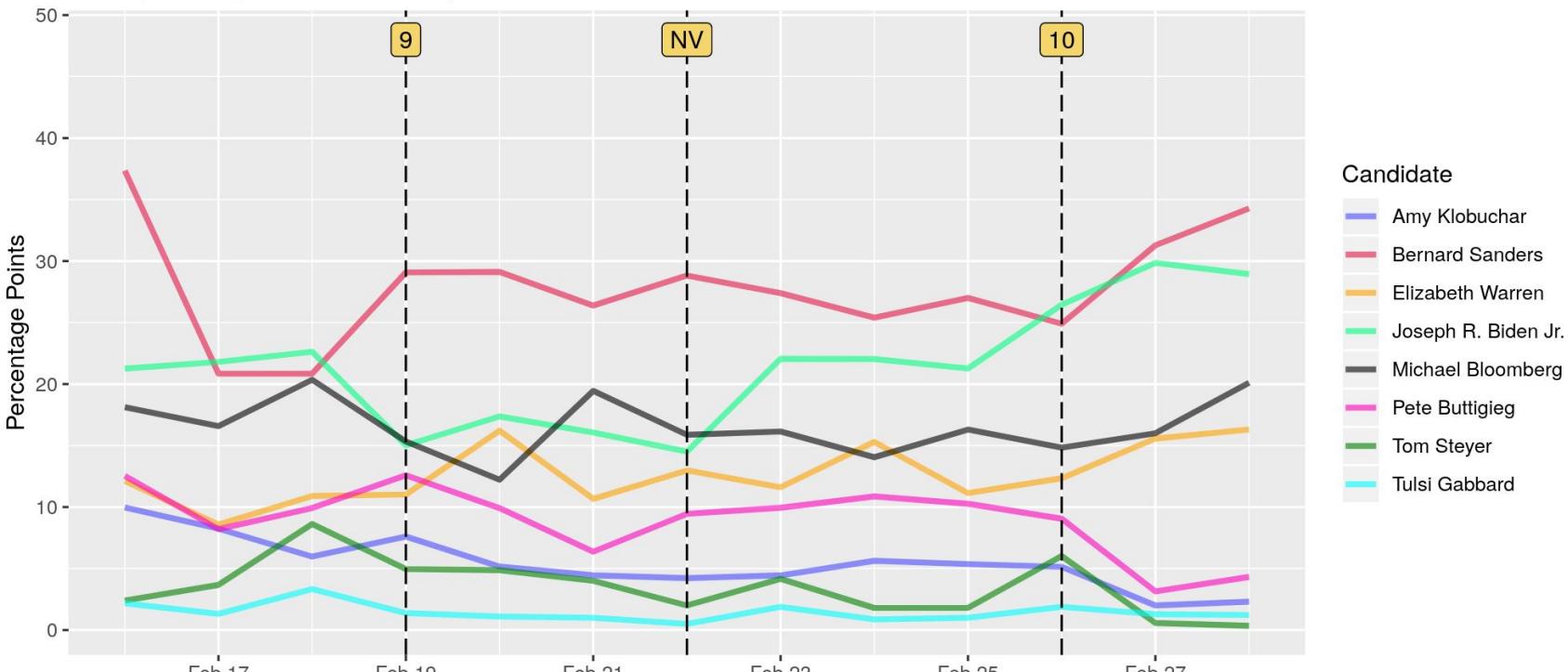
## Polling During New Hampshire Primary



Data: [www.fivethirtyeight.com](http://www.fivethirtyeight.com) (as of 03/06/2020 )



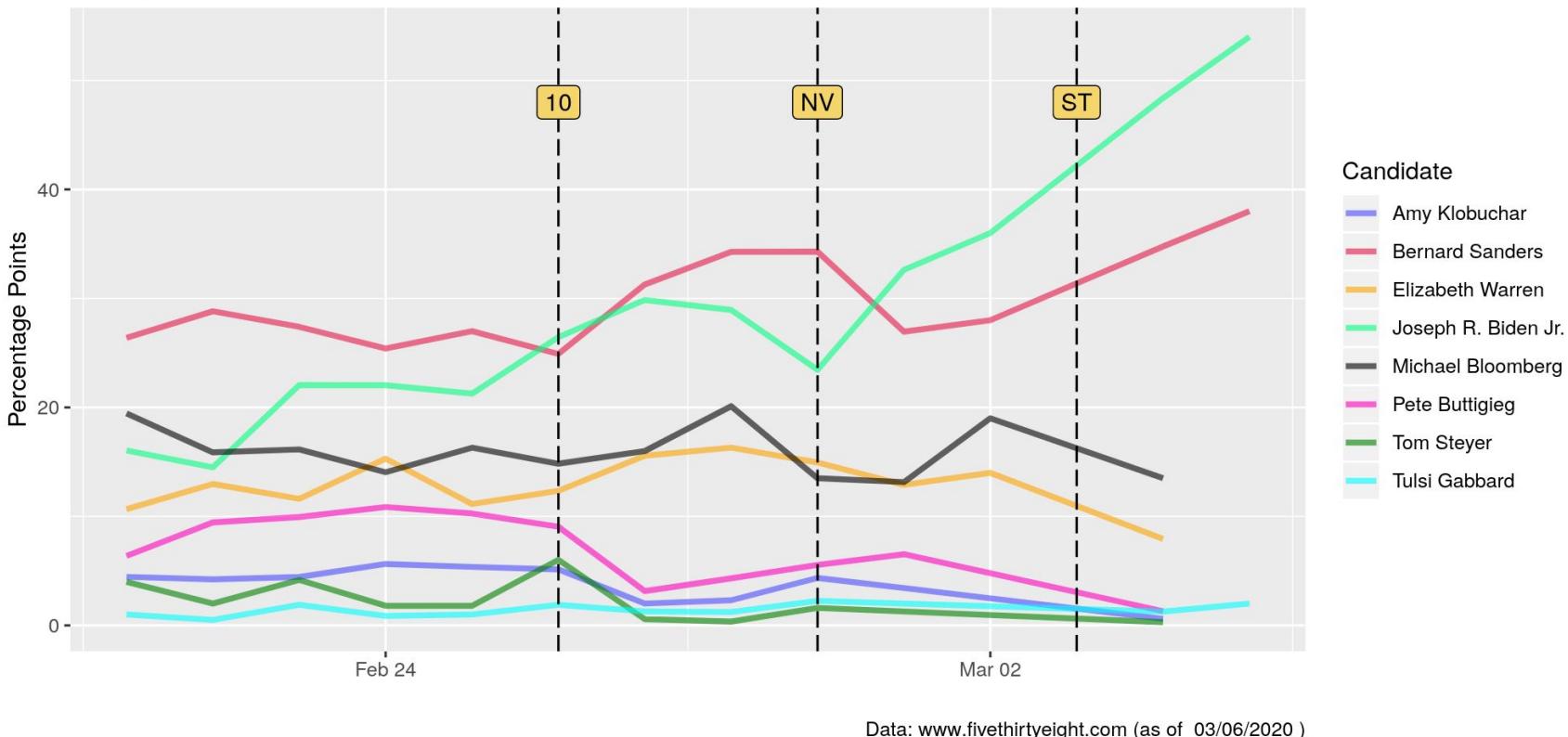
## Polling During Nevada Primary



Data: [www.fivethirtyeight.com](http://www.fivethirtyeight.com) (as of 03/06/2020 )



## Polling During SC and ST Primaries



# Democratic Primaries: Funding

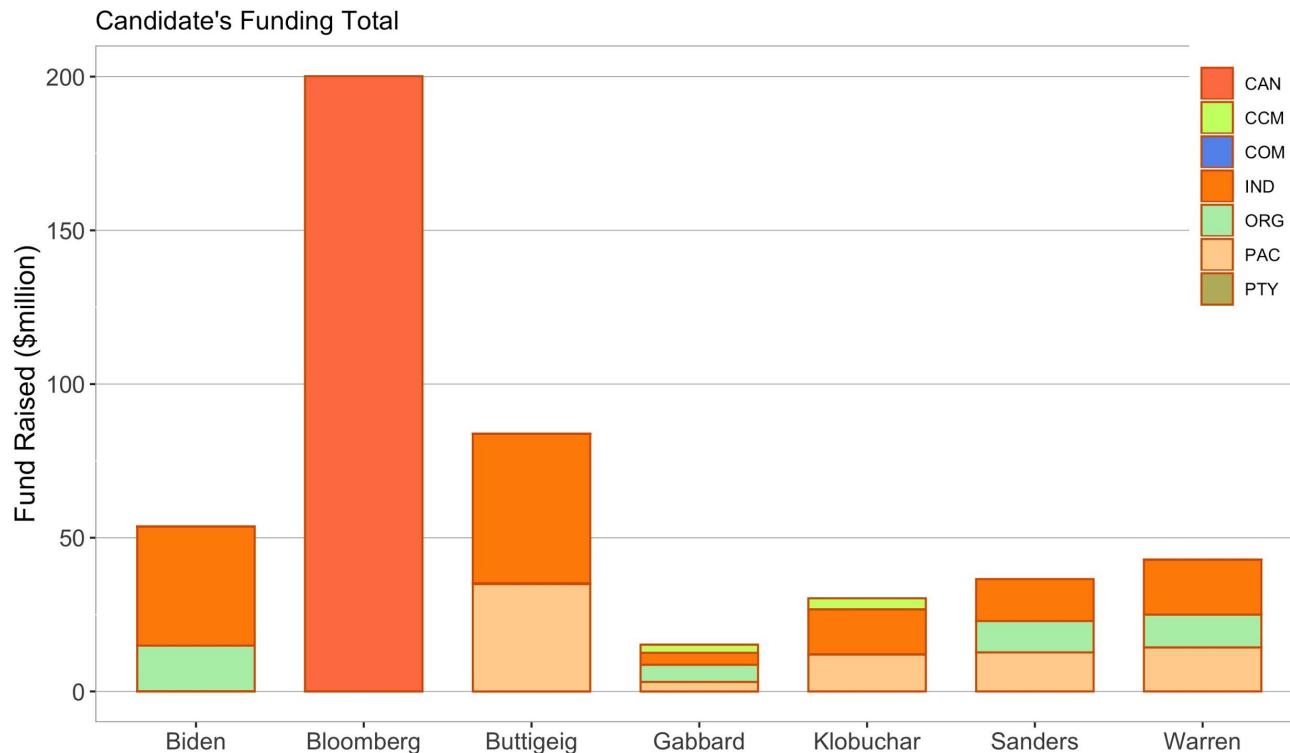


# Democratic Presidential Funding

Source of funding include:

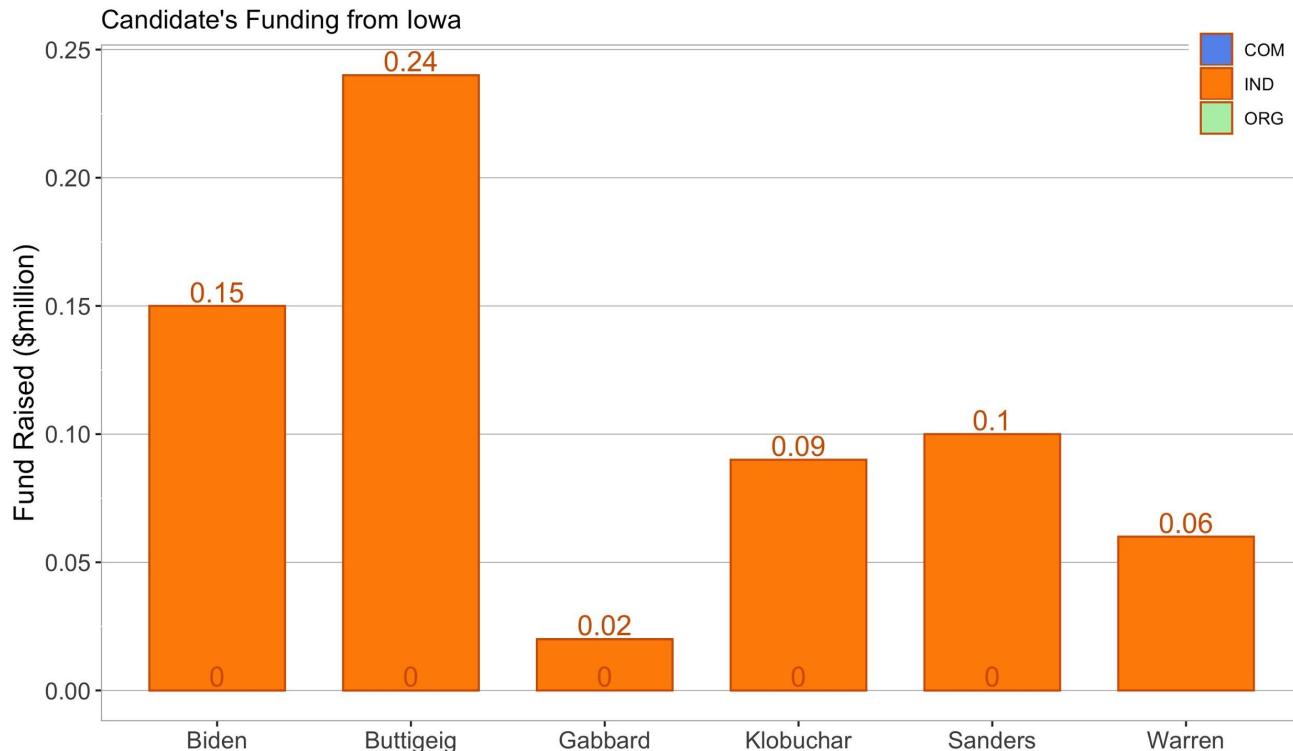
- IND: Individuals
- CMM:Campaign committee
- COM:Other committee
- ORG: Organization
- PPC: Political party committee
- PAC: Political action committee

# Funding - National



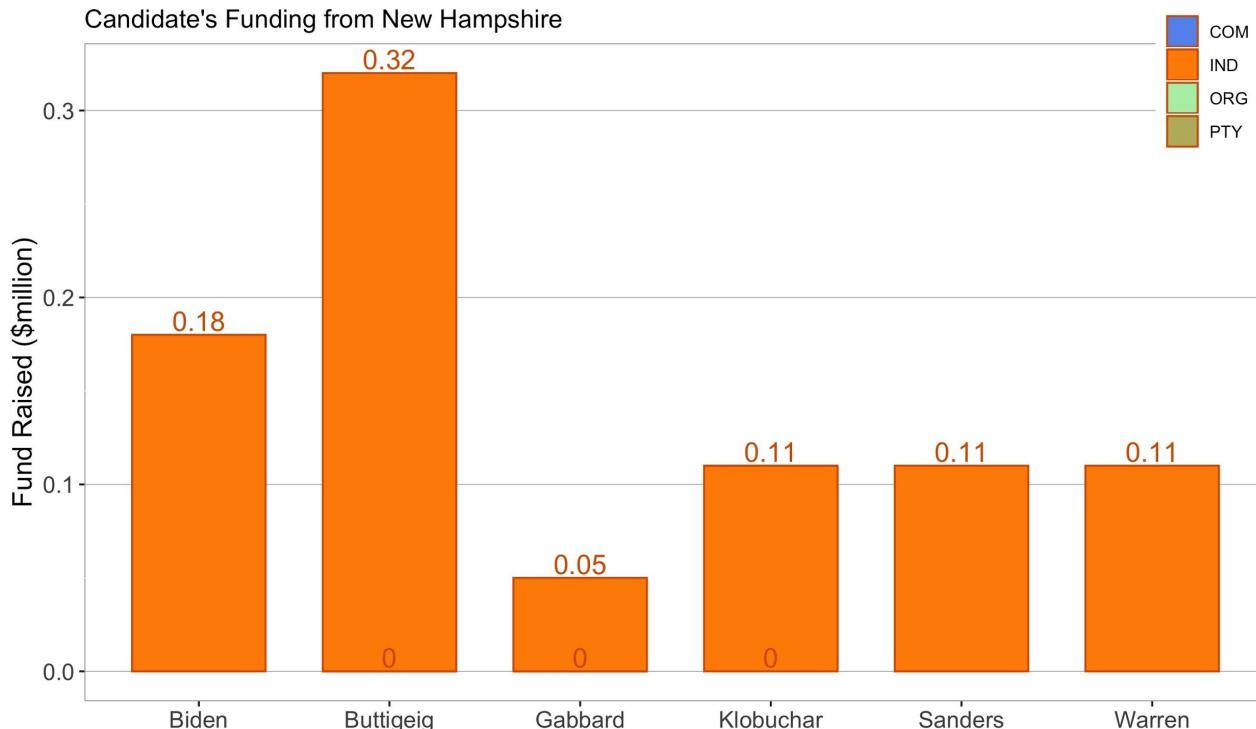


# Funding - IOWA



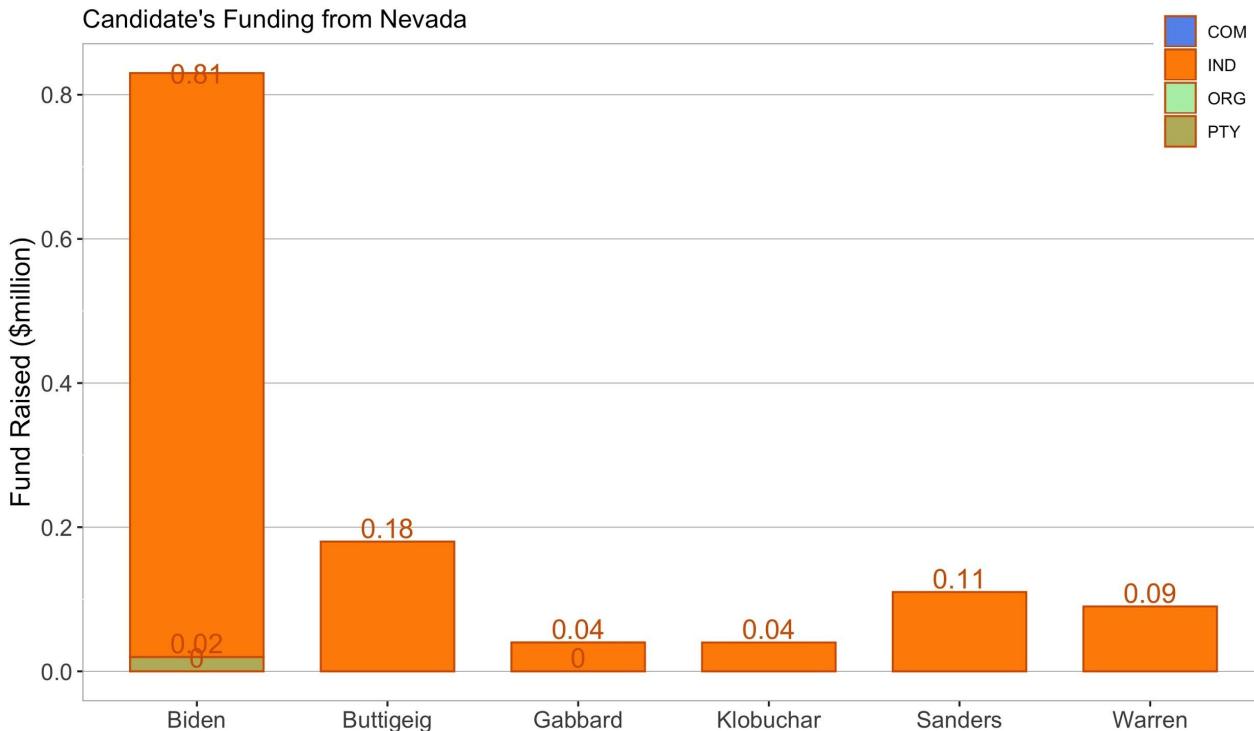


# Funding - New Hampshire





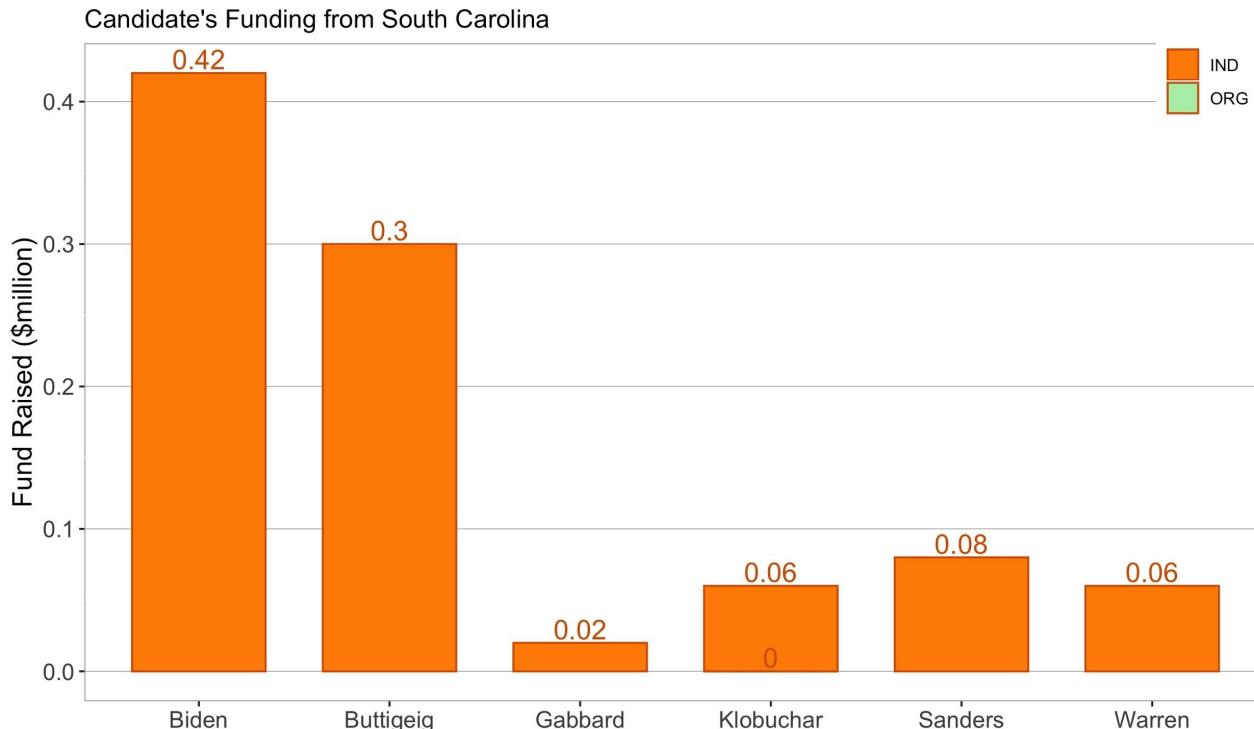
# Funding - Nevada



Candidate	Delegates	%	Count
Sanders	24	46.8%	6788
Biden	9	20.2%	2927
Buttigieg	3	14.3%	2073
Warren	0	9.2%	1406



# Funding - South Carolina

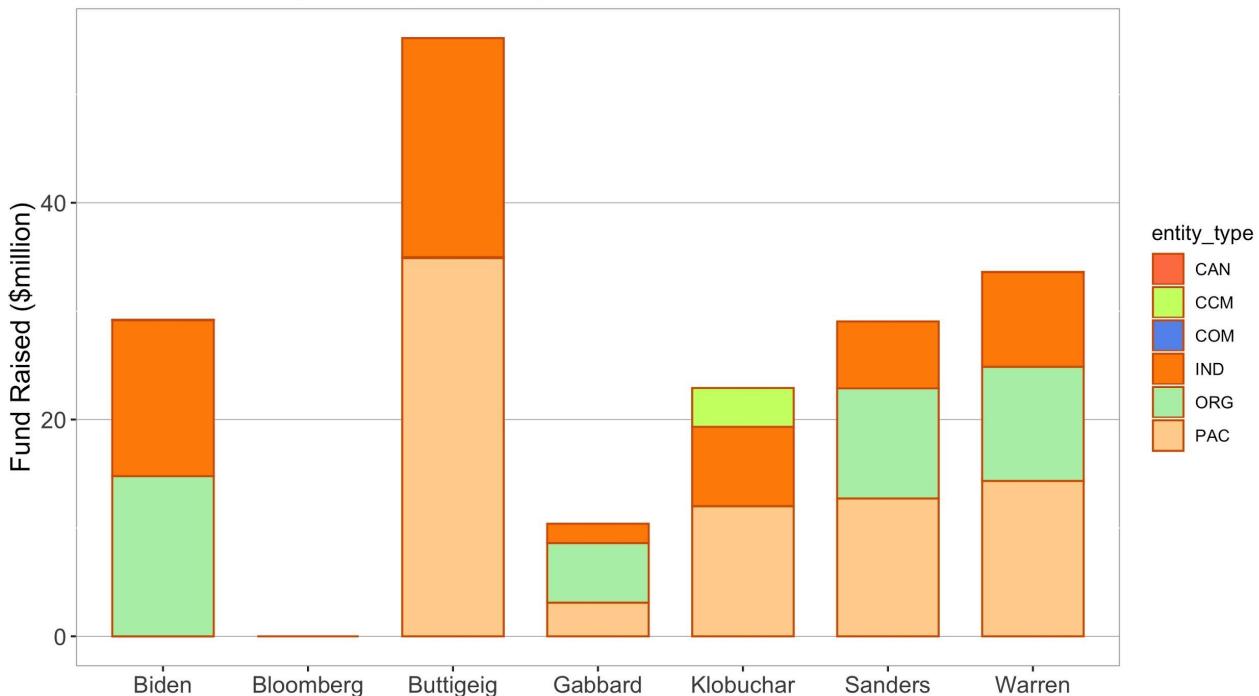


Candidate	Delegates	%	Count
Sanders	39	48.4%	256,047
Biden	15	19.9%	105,197
Steyer	0	11.3%	59,893
Buttigieg	0	8.2%	43,606



# Funding - Super Tuesday

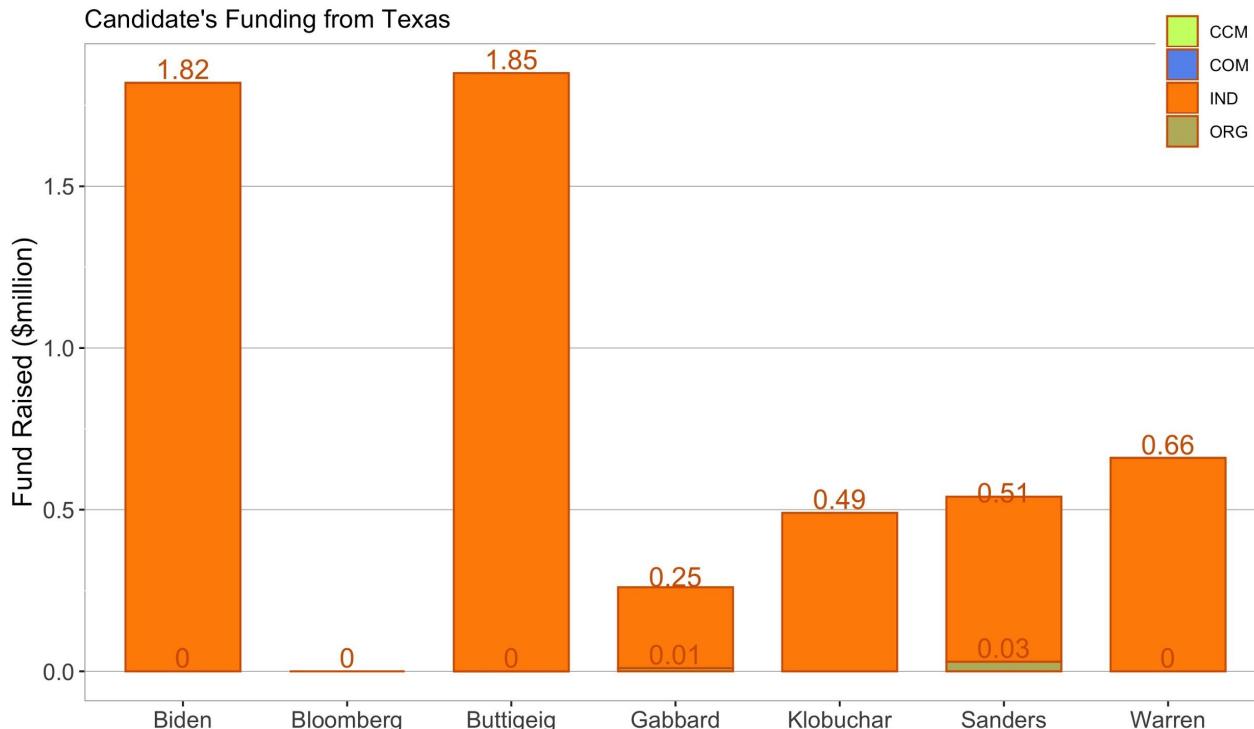
Candidate's Funding from Super Tuesday



Candidate	Delegates	%	Count
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

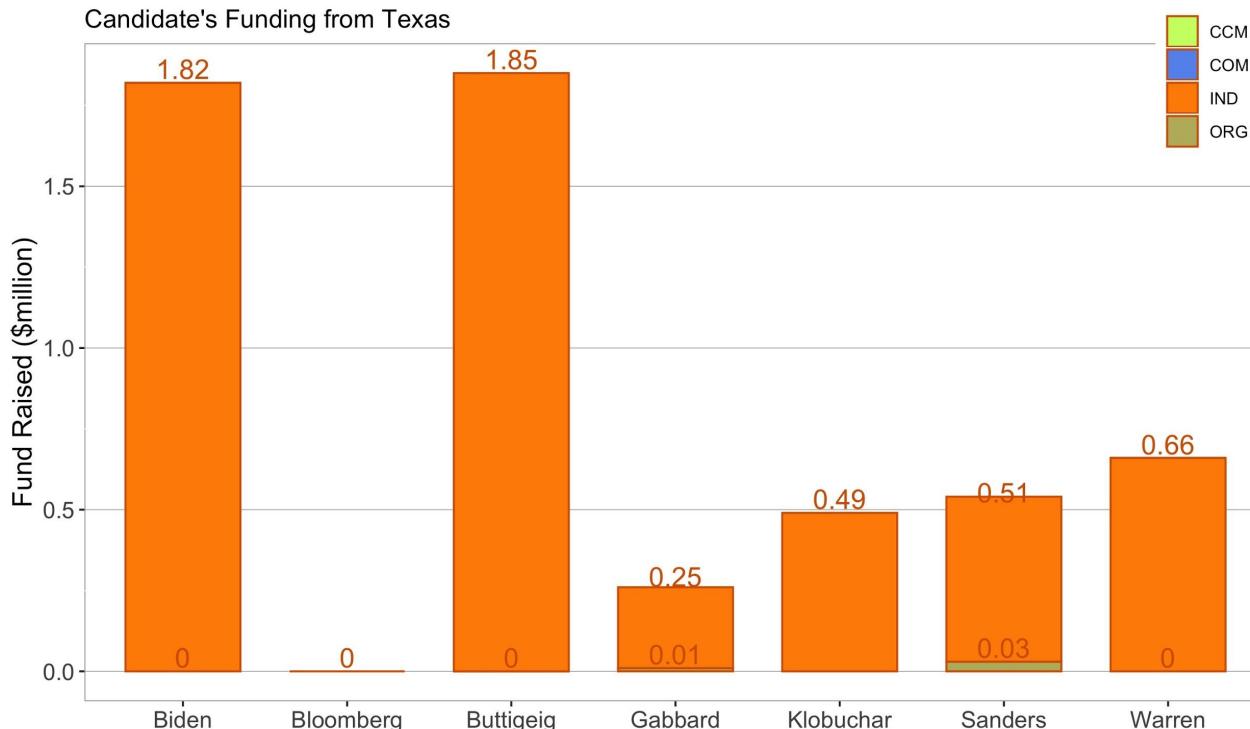


# Funding - Super Tuesday(Texas)



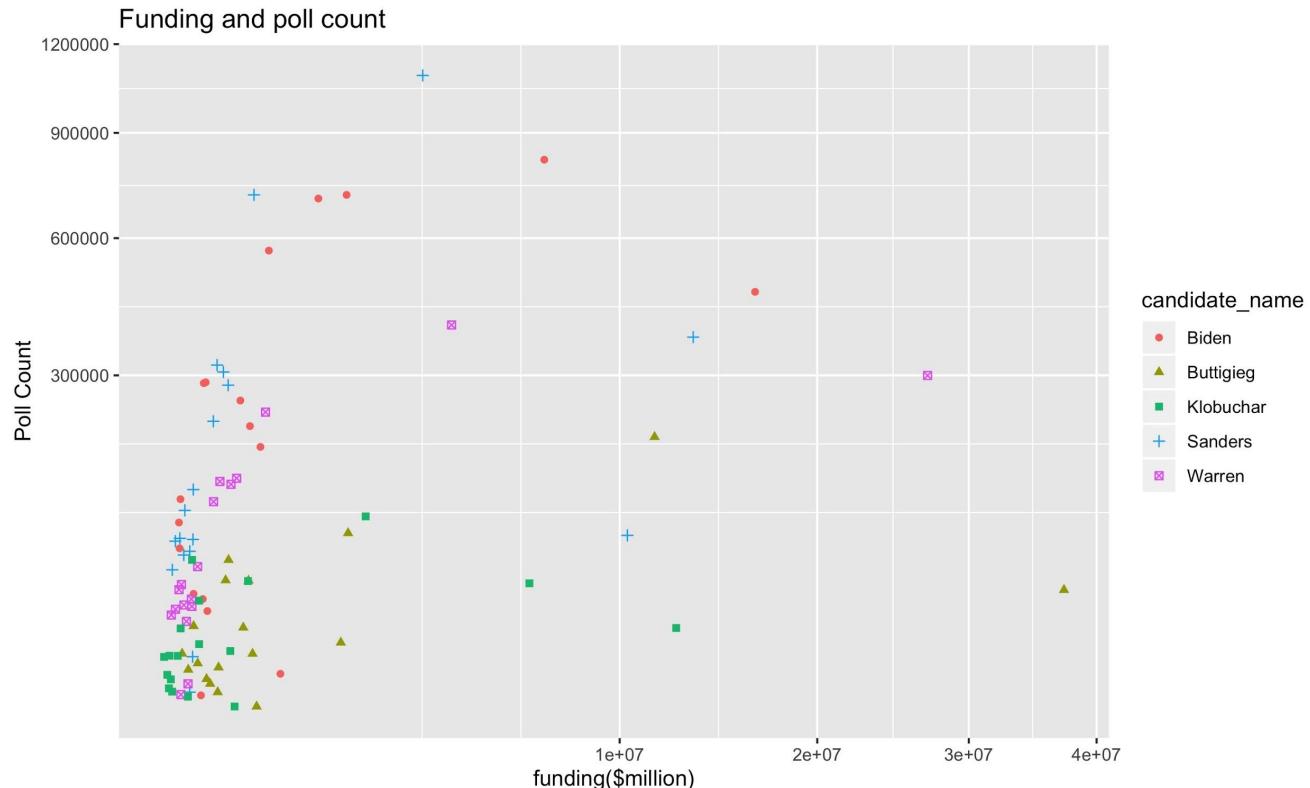
Candidate	Delegates	%	Count
Biden	81	34.5%	716,030
Sanders	72	30%	622,360
Bloomberg	5	14.4%	298,262
Warren	1	11.4%	237,028

# Funding - Super Tuesday(California)





# Funding - fit



# Funding - fit

Residuals:

	Min	1Q	Median	3Q	Max
	-381795	-71544	2603	47933	233675

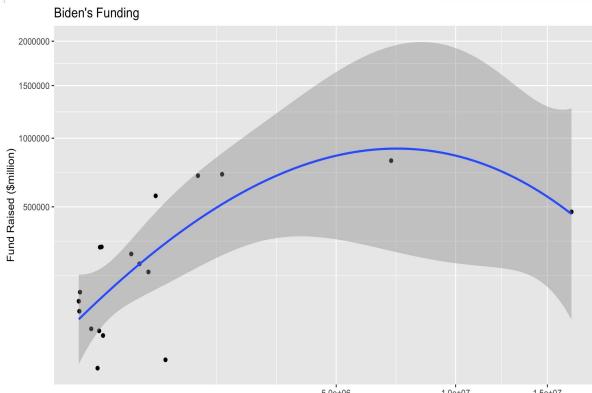
Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	271128	36278	7.474	3e-06 ***
poly(contribution_receipt_amount, 3)1	498248	153915	3.237	0.005963 **
poly(contribution_receipt_amount, 3)2	-702270	153915	-4.563	0.000443 ***
poly(contribution_receipt_amount, 3)3	409662	153915	2.662	0.018603 *

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 153900 on 14 degrees of freedom  
 Multiple R-squared: 0.7327, Adjusted R-squared: 0.6755  
 F-statistic: 12.79 on 3 and 14 DF, p-value: 0.0002679



lm(formula = Count ~ log(contribution\_receipt\_amount), data = biden\_amount)

Residuals:

	Min	1Q	Median	3Q	Max
	-360067	-135845	6577	124539	281980

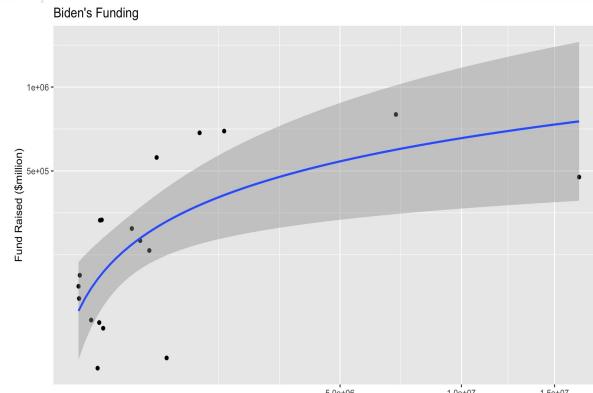
Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1338768	371277	-3.606	0.002370 **
log(contribution_receipt_amount)	124832	28583	4.367	0.000479 ***

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 188100 on 16 degrees of freedom  
 Multiple R-squared: 0.5438, Adjusted R-squared: 0.5153  
 F-statistic: 19.07 on 1 and 16 DF, p-value: 0.0004786

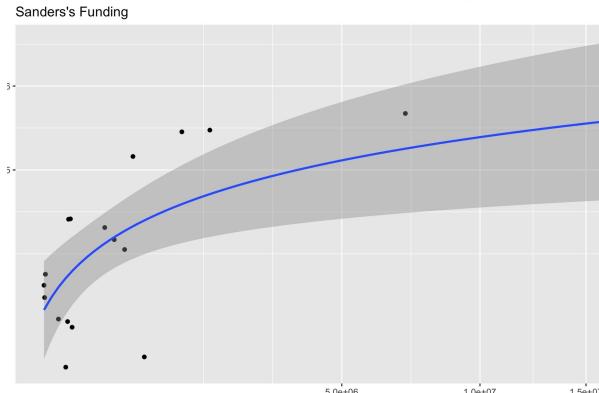


# Funding - fit

```
ormula = Count ~ log(contribution_receipt_amount), data = sanders_amount
duals:
Min      1Q   Median     3Q      Max
166  -77976  -21226  27816  632587

ficients:
Estimate Std. Error t value Pr(>|t|)
(Intercept) -866664   414931 -2.089  0.0531 .
contribution_receipt_amount  87922   33128  2.654  0.0173 *
if. codes:  0 *** 0.001 ** 0.01 * 0.05 . 0.1 ' 1
```

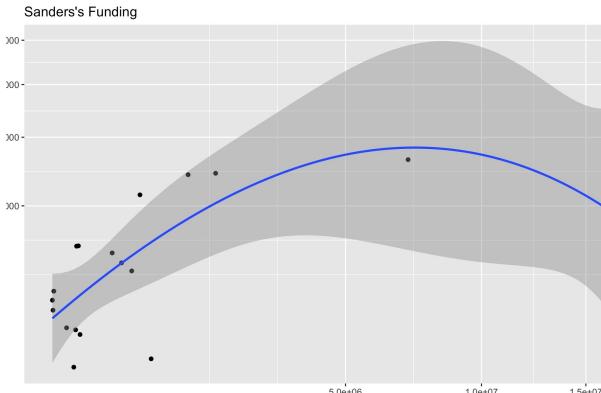
dual standard error: 239300 on 16 degrees of freedom  
 multiple R-squared: 0.3057, Adjusted R-squared: 0.2623  
 statistic: 7.044 on 1 and 16 DF, p-value: 0.01733



```
duals:
Min      1Q   Median     3Q      Max
098  -49722  -11995  21408  319579

ficients:
Estimate Std. Error t value Pr(>|t|)
(Intercept) 224333   25680  8.736 4.85e-07 .
(contraction_receipt_amount, 3)1 233253  108951  2.141  0.0504
(contraction_receipt_amount, 3)2 -627098  108951 -5.756 4.97e-05 .
(contraction_receipt_amount, 3)3  840240  108951  7.712 2.09e-06
```

dual standard error: 109000 on 14 degrees of freedom  
 multiple R-squared: 0.8741, Adjusted R-squared: 0.8471  
 statistic: 32.4 on 3 and 14 DF, p-value: 1.487e-06

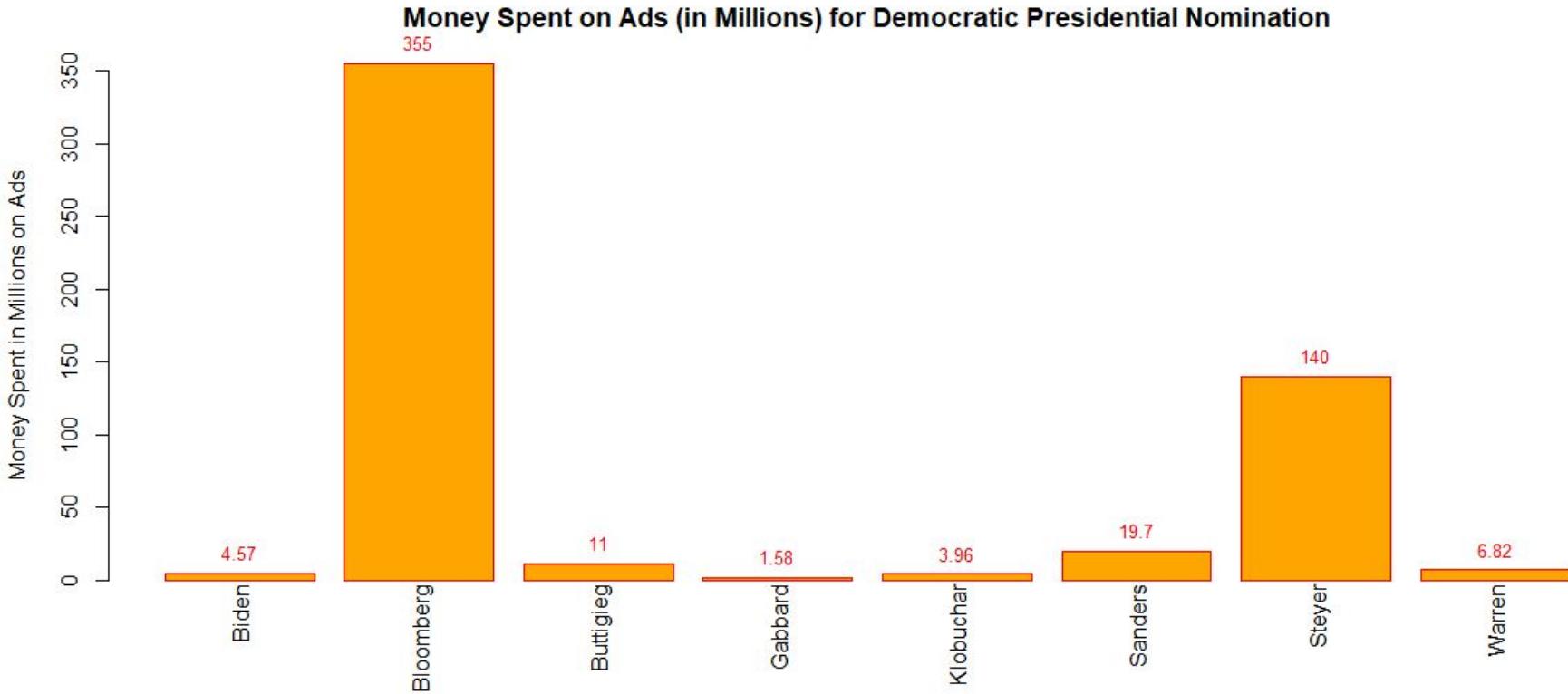


# Democratic Primaries: Ad Spending



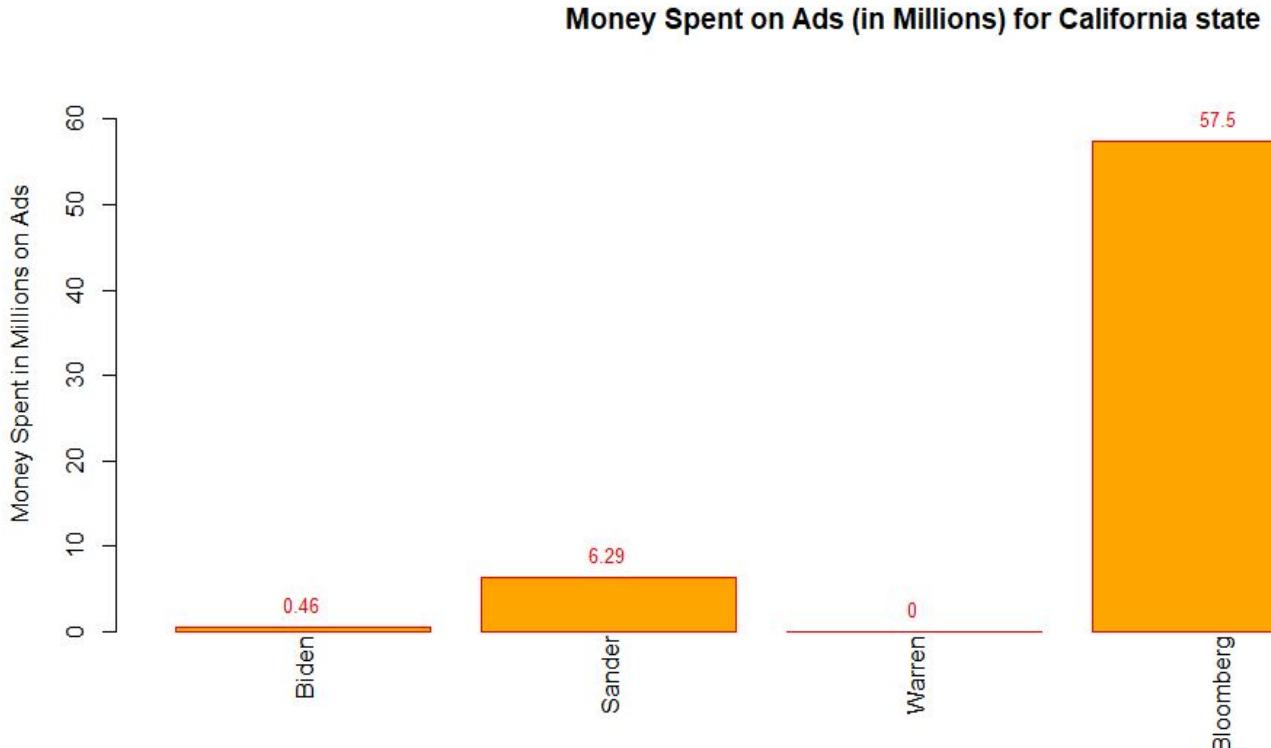


# National Ads Spending (07/2019 - 02/2020)





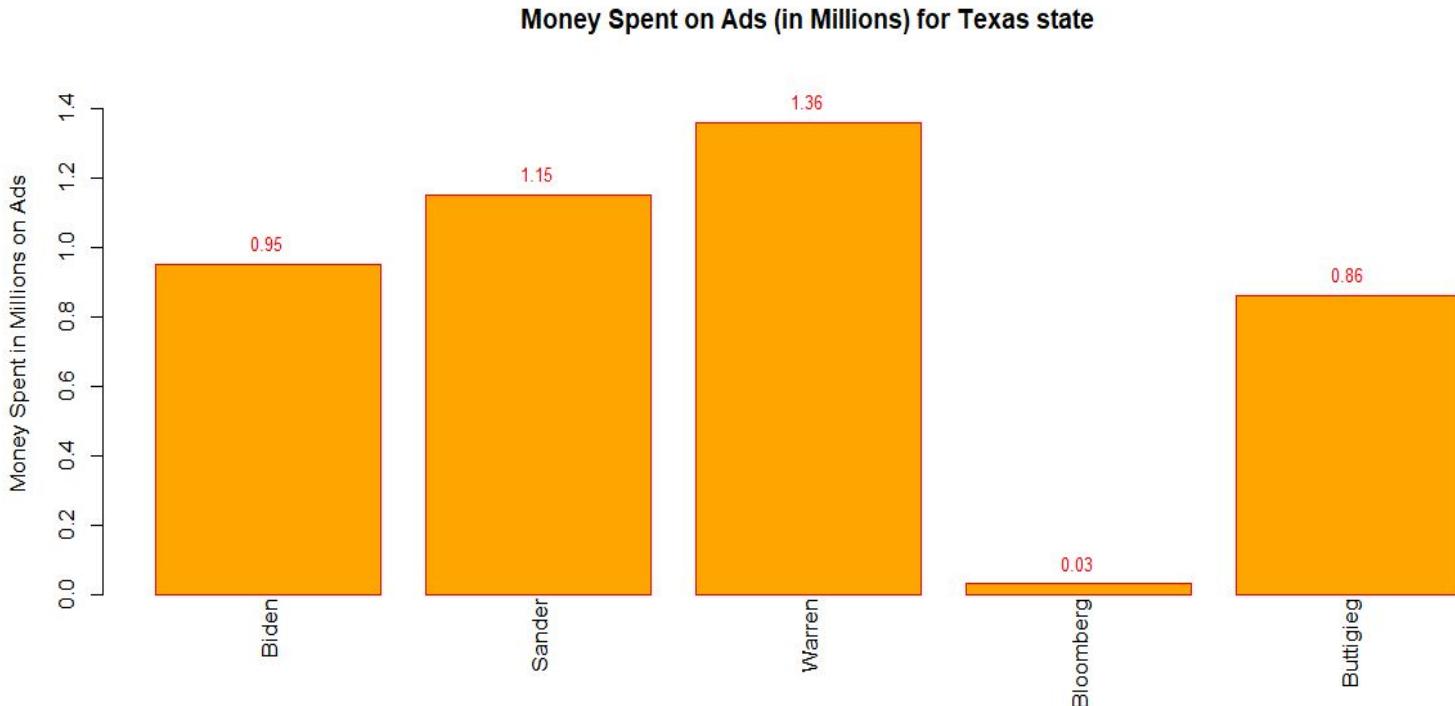
# California Ads (07/2019 - 02/2020)



Top 5 Candidates	
Biden	35%
Sander	28%
Bloomberg	18%
Warren	14%
Pete	7%

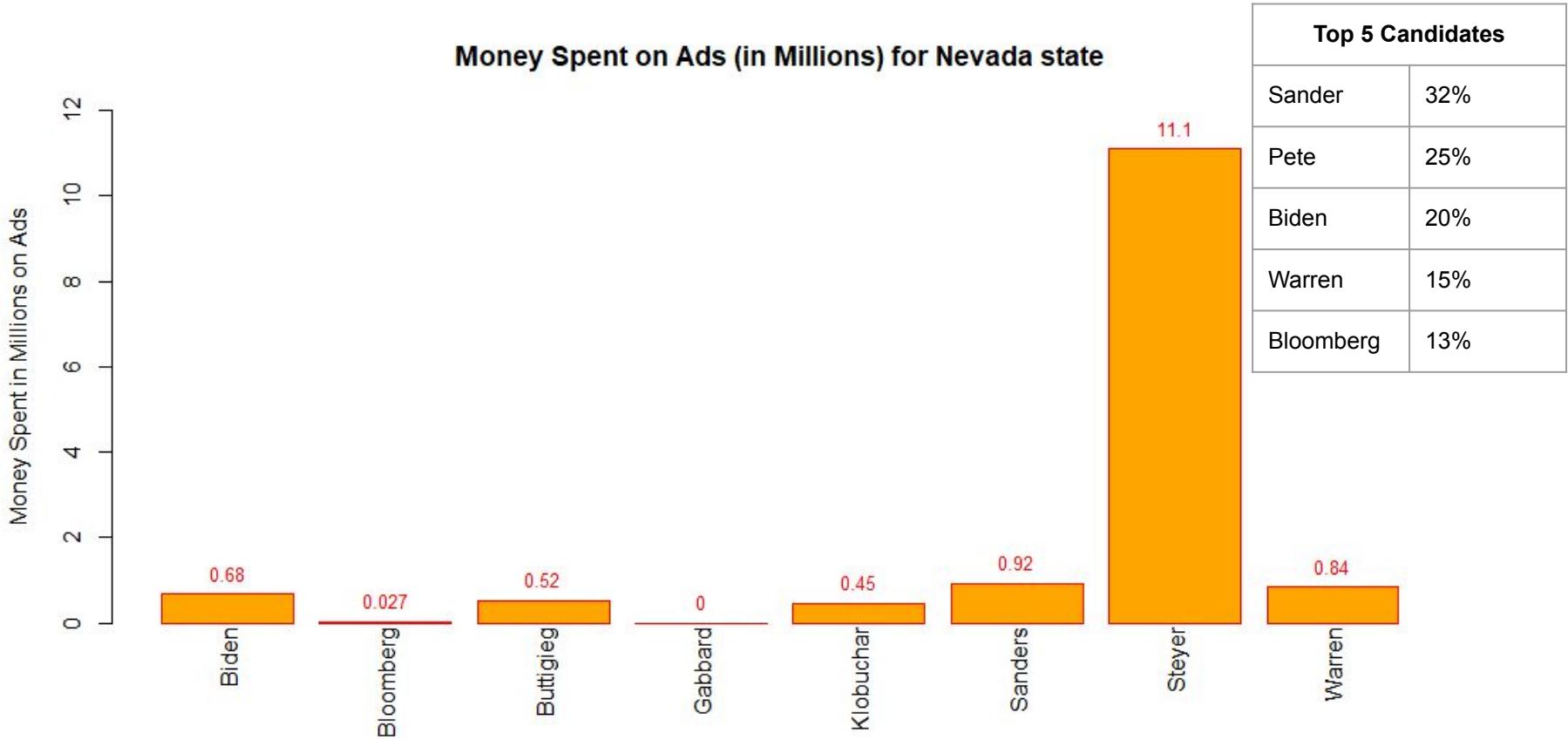


# Texas Ads (07/2019 - 02/2020)



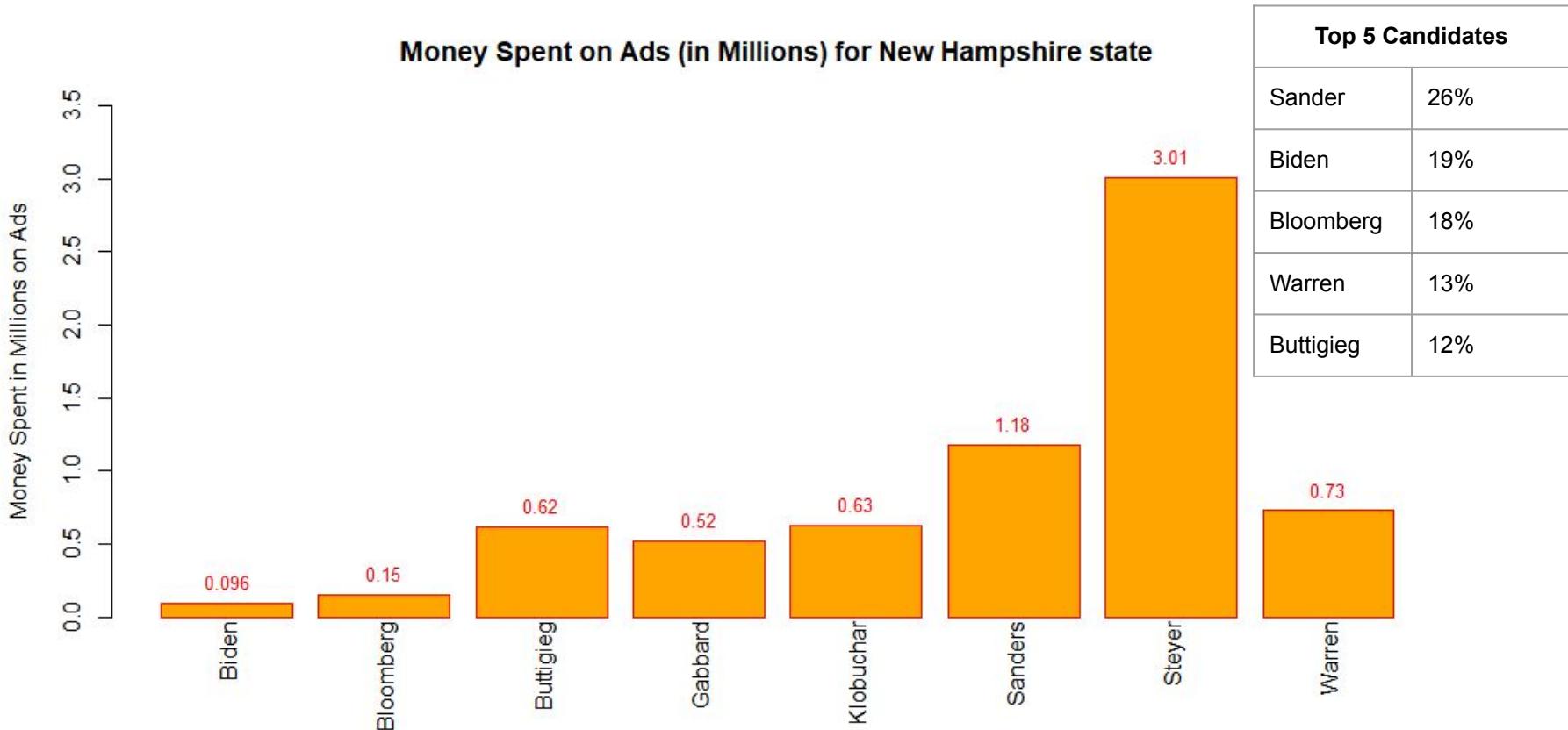
Top 5 Candidates	
Biden	35%
Sander	28%
Bloomberg	18%
Warren	14%
Pete	7%

# Nevada Ads (07/2019 - 02/2020)



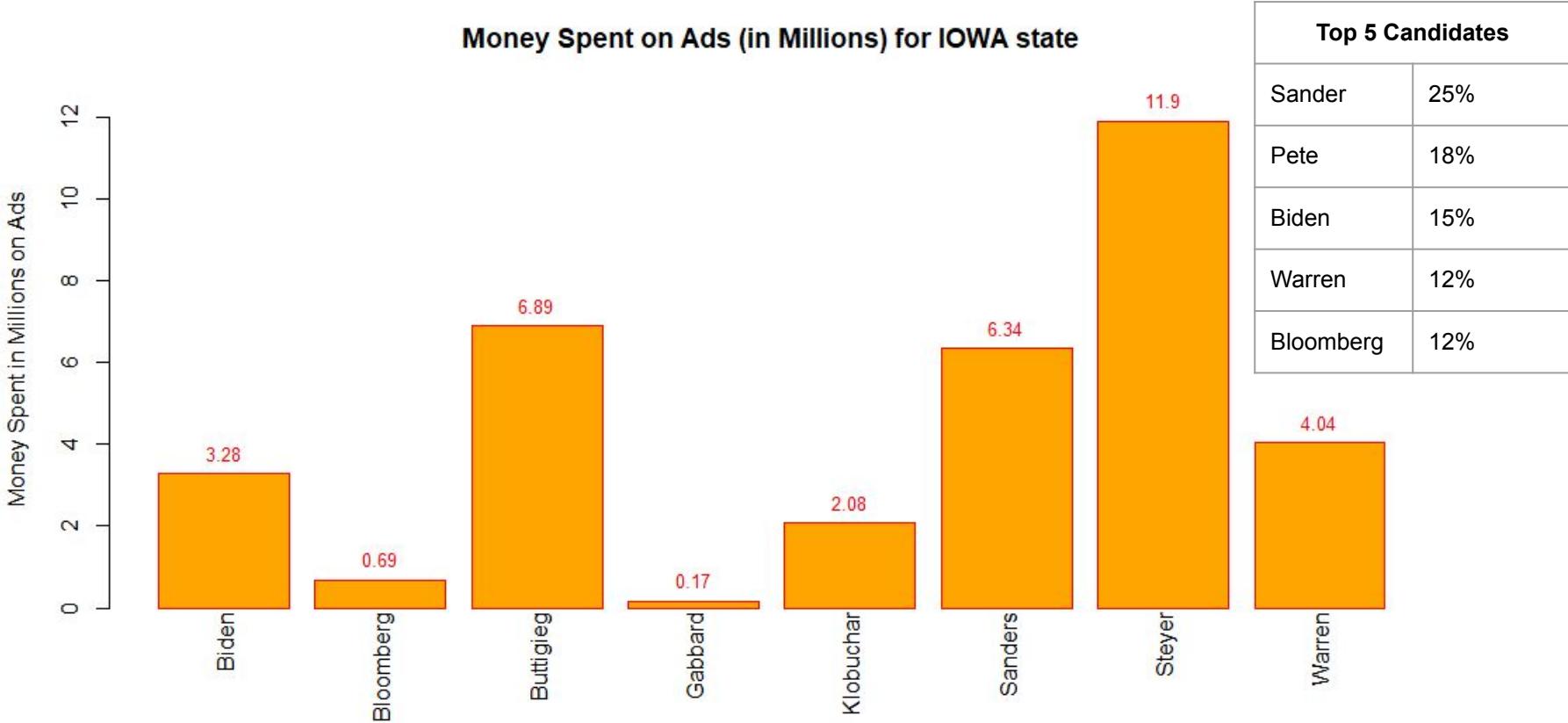


# New Hampshire Ads (07/2019 - 02/2020)





# Iowa Ads (07/2019 - 02/2020)





# Delegates Awarded Data

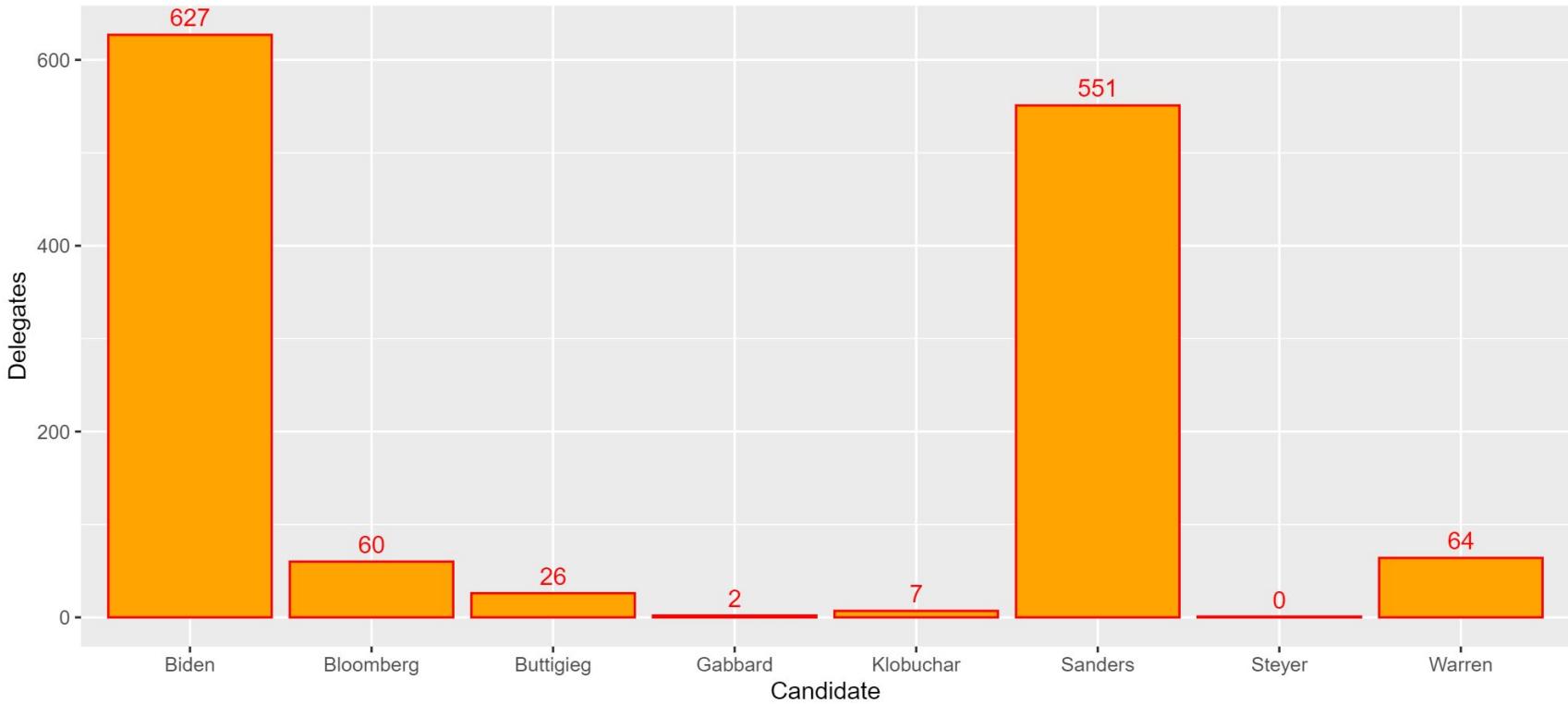
```
del_df<-read.csv("../dat/delegates.csv", header=TRUE)

candidate<-colnames(del_df)[5:12]
delegates<-c(sum(del_df$Klobuchar), sum(del_df$Sanders), sum(del_df$Warren), sum(del_df$Biden),
            sum(del_df$Bloomberg), sum(del_df$Buttigieg), sum(del_df$Steyer), sum(del_df$Gabbard))
delegates[is.na(delegates)]<-0

del_df<-data.frame(candidate, delegates)
```



## Total Delegates Awarded



Candidates need 1,991 delegates to secure their nomination on the first ballot at the Democratic National Convention

