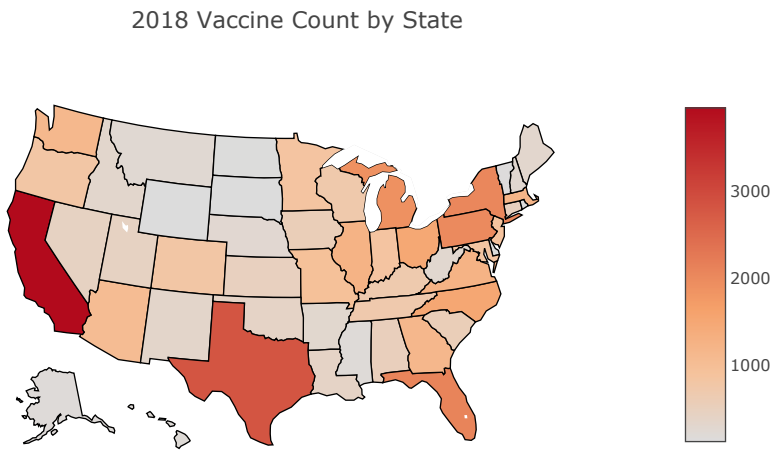
VAX-DASH: VAERS DATA REPORT

INTRODUCTION

The rise of measles cases in the U.S. has been making recent headline news. From January 1 – April 26, 2019, the CDC reported 704 cases (1). For a highly contageous disease that was eliminated in the U.S. in 2000, the number of reported cases has now reached the highest it has been since 1994(1). Of these reported cases, 503 (71%) involved unvaccinated persons and most 689 (98%) were residents in the U.S.(1). This year alone, there had been thirteen outbreaks, comprising 663 (94%) of all reported cases(1). Six of the thirteen outbreaks were associated with underimmunized, close-knit communities which made up 88% of all cases(1). As of June 17, 2019, cases now reach 1,044 as reported by CNN (2).

Vaccination Map

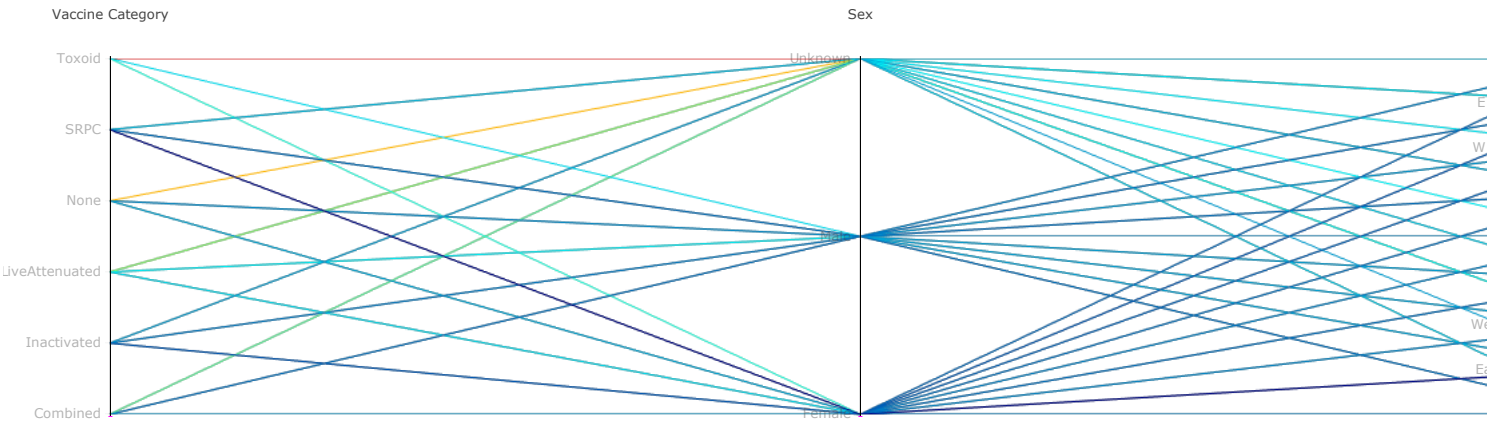


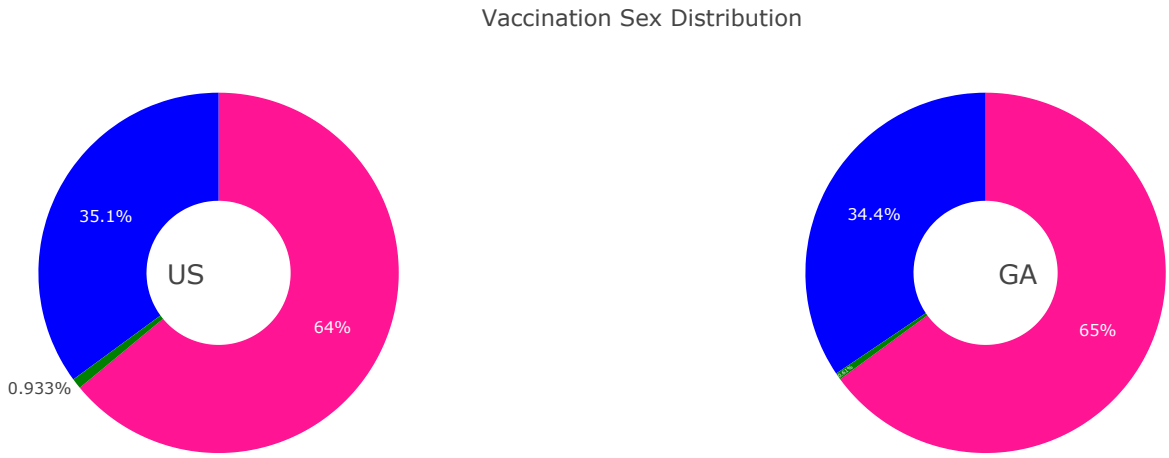
Recommended Vaccination Schedule

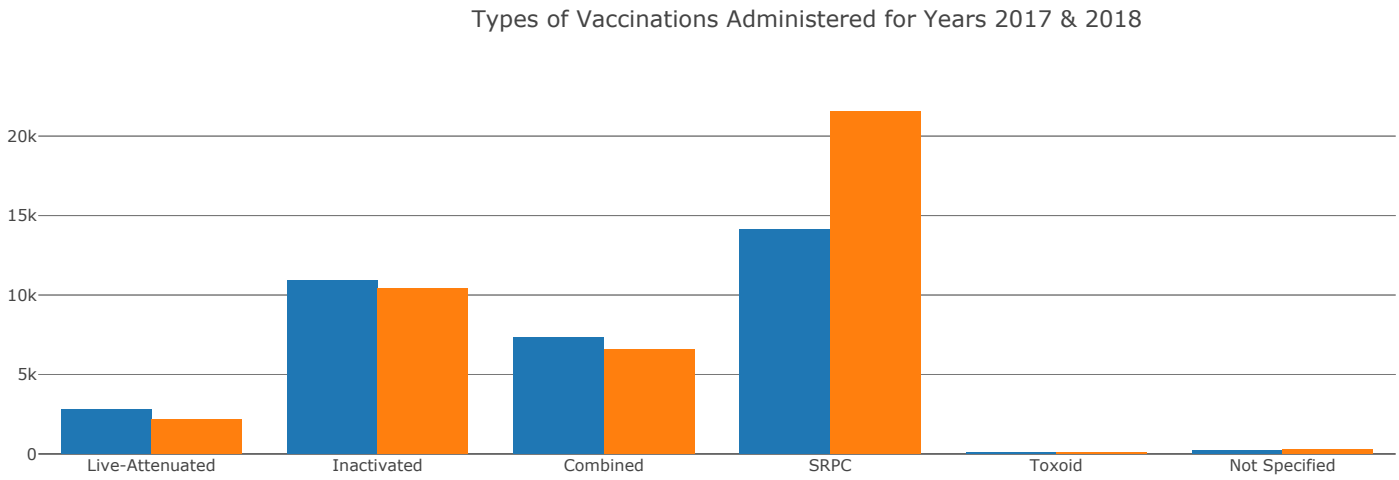
Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19-23 months	2-3 years	4-6 years
HepB	HepB			HepB						
		RV	RV	RV						
		DTaP	DTaP	DTaP		DTaP				DTaP
		Hib	Hib	Hib	Hib					
		PCV13	PCV13	PCV13	PCV13					
		IPV	IPV	IPV						IPV
				Influenza (Yearly)*						
					MMR					MMR
					Varicella					Varicella
					HepA§					

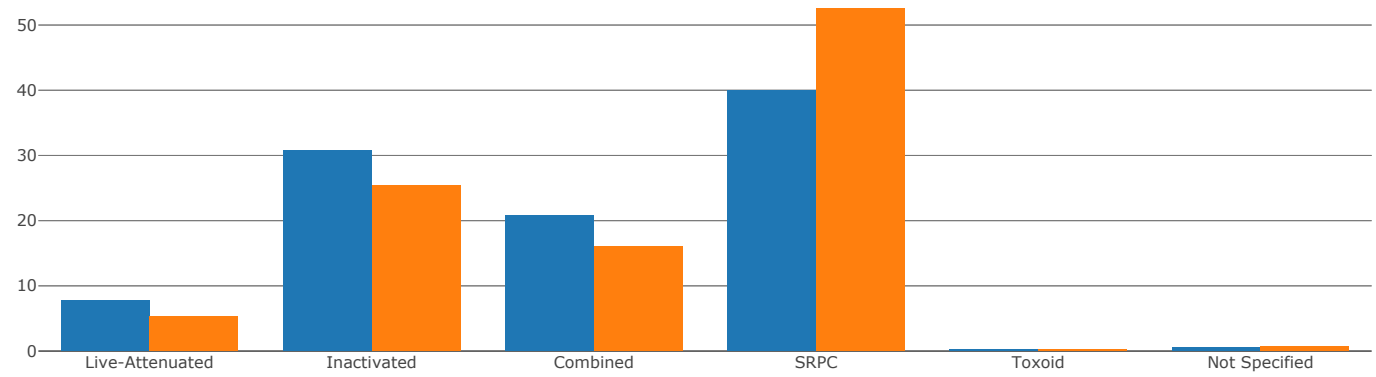
Source = https://www.cdc.gov/vaccines/schedules/easy-to-read/child-easyread.html#table-child

Overall Stratification


Vaccine Category
Sex
Toxoid
SRPC
None
LiveAttenuated
Inactivated
Combined
Unknown
Male
Female


Vaccination Sex Distribution
US
35.1%
64%
0.933%
GA
34.4%
65%


Types of Vaccinations Administered for Years 2017 & 2018
20k
15k
10k
5k
0
Live-Attenuated
Inactivated
Combined
SRPC
Toxoid
Not Specified



Vaccination Types

```
Inactivated_2018 = []
SRPC_2018 = []
Combined_2018 = []
Toxoid_2018=[]
LiveAttenuated_2018 = []

for i in range(length_of_vaccine_type_key_2018):
    if vaccine_type_key_2018.iloc[i,1] == "Inactivated":
        Inactivated_2018.append(vaccine_type_key_2018.iloc[i,0])

    elif vaccine_type_key_2018.iloc[i,1] == "Combined":
        Combined_2018.append(vaccine_type_key_2018.iloc[i,0])

    elif vaccine_type_key_2018.iloc[i,1] == "SRPC":
        SRPC_2018.append(vaccine_type_key_2018.iloc[i,0])

    elif vaccine_type_key_2018.iloc[i,1] == "Live-Attenuated":
        LiveAttenuated_2018.append(vaccine_type_key_2018.iloc[i,0])

    elif vaccine_type_key_2018.iloc[i,1] == "Toxoid":
        Toxoid_2018.append(vaccine_type_key_2018.iloc[i,0])
```

Vaccination Types 2018

```
vaccine_category_2018 = []


for i in df_2018['Vaccine_Name']:
    if i in Inactivated_2018:
        vaccine_category_2018.append('Inactivated')
    elif i in SRPC_2018:
        vaccine_category_2018.append('SRPC')
    elif i in Combined_2018:
        vaccine_category_2018.append('Combined')
    elif i in Toxoid_2018:
        vaccine_category_2018.append('Toxoid')
    elif i in LiveAttenuated_2018:
        vaccine_category_2018.append('LiveAttenuated')
    else:
        print(i)
        vaccine_category_2018.append('None')
```

Age Bins

```
bins = [0,.17,.33,.5,1,2,3,6,10,13,18,26,60,100]
```

```
lablels = ['less than 2 months', '2-4 months', '4-6 months',
         '6 months - 1 year', '1-2 y', '2-3y', '3-6 y',
         '6-10y' , '10-13y', '13-18y', '18-26y', '26-60', '60 or Older'
        ]
```

```
dataframe_2018['Age_Categories'] = pd.cut(dataframe_2018['AGE_YRS'], bins, labels= lablels)
```

Vaccination Dataframe

	VAERS_ID	SEX	STATE	AGE_YRS	Vaccine_Name	Age_Categories	Vaccine_Category
0	732217	F	TN	66.00	VACCINE NOT SPECIFIED	60 or Older	None
1	732218	F	NY	0.33	DTAP + IPV + HIB	2-4 months	Combined
2	732218	F	NY	0.33	PNEUMO	2-4 months	SRPC
3	732218	F	NY	0.33	ROTAVIRUS	2-4 months	LiveAttenuated
4	732219	F	NY	71.00	ZOSTER	60 or Older	SRPC