In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
import plotly.express as px
```

In [3]:
```
data = pd.read_csv(r"C:\Users\omkar navale\Downloads\covid_19_india.csv")
```

In [4]:
```
1 data
```

Out[4]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	1	2020-01-30	6:00 PM	Kerala	1	0	0	0	1
1	2	2020-01-31	6:00 PM	Kerala	1	0	0	0	1
2	3	2020-02-01	6:00 PM	Kerala	2	0	0	0	2
3	4	2020-02-02	6:00 PM	Kerala	3	0	0	0	3
4	5	2020-02-03	6:00 PM	Kerala	3	0	0	0	3
...	...	...	...	...	...	...	...	...	...
16845	16846	2021-07-07	8:00 AM	Telangana	-	-	613124	3703	628282
16846	16847	2021-07-07	8:00 AM	Tripura	-	-	63964	701	68612
16847	16848	2021-07-07	8:00 AM	Uttarakhand	-	-	332006	7338	340882
16848	16849	2021-07-07	8:00 AM	Uttar Pradesh	-	-	1682130	22656	1706818
16849	16850	2021-07-07	8:00 AM	West Bengal	-	-	1472132	17834	1507241

16850 rows × 9 columns

In [5]:
```
data.replace('-','0',inplace=True)
data.replace('Bihar****','Bihar',inplace=True)
data.replace('Telengana','Telangana',inplace=True)
data
```

Out[5]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	1	2020-01-30	6:00 PM	Kerala	1	0	0	0	1
1	2	2020-01-31	6:00 PM	Kerala	1	0	0	0	1
2	3	2020-02-01	6:00 PM	Kerala	2	0	0	0	2
3	4	2020-02-02	6:00 PM	Kerala	3	0	0	0	3
4	5	2020-02-03	6:00 PM	Kerala	3	0	0	0	3
...	...	...	...	...	...	...	...	...	...
16845	16846	2021-07-07	8:00 AM	Telangana	0	0	613124	3703	628282
16846	16847	2021-07-07	8:00 AM	Tripura	0	0	63964	701	68612
16847	16848	2021-07-07	8:00 AM	Uttarakhand	0	0	332006	7338	340882
16848	16849	2021-07-07	8:00 AM	Uttar Pradesh	0	0	1682130	22656	1706818
16849	16850	2021-07-07	8:00 AM	West Bengal	0	0	1472132	17834	1507241

16850 rows × 9 columns

In [6]:
```
data_1=data.drop(columns=['Sno','Time'],axis=1 )
```

In [7]:
```
1 data_1.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 16850 entries, 0 to 16849
Data columns (total 7 columns):
 #   Column                    Non-Null Count  Dtype 
---  ------                    --------------  ----- 
 0   Date                      16850 non-null  object
 1   State/UnionTerritory      16850 non-null  object
 2   ConfirmedIndianNational   16850 non-null  object
 3   ConfirmedForeignNational  16850 non-null  object
 4   Cured                     16850 non-null  int64 
 5   Deaths                    16850 non-null  int64 
 6   Confirmed                 16850 non-null  int64 
dtypes: int64(3), object(4)
memory usage: 921.6+ KB
```

In [8]:
```
1 data_1.columns
```

Out[8]:
```
Index(['Date', 'State/UnionTerritory', 'ConfirmedIndianNational',
       'ConfirmedForeignNational', 'Cured', 'Deaths', 'Confirmed'],
      dtype='object')
```

In [ ]:
```
1
```

In [ ]:
```
1
```

In [ ]:
```
1
```

In [9]:
```
1 data_1.head(10)
```

Out[9]:

	Date	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	2020-01-30	Kerala	1	0	0	0	1
1	2020-01-31	Kerala	1	0	0	0	1
2	2020-02-01	Kerala	2	0	0	0	2
3	2020-02-02	Kerala	3	0	0	0	3
4	2020-02-03	Kerala	3	0	0	0	3
5	2020-02-04	Kerala	3	0	0	0	3
6	2020-02-05	Kerala	3	0	0	0	3
7	2020-02-06	Kerala	3	0	0	0	3
8	2020-02-07	Kerala	3	0	0	0	3
9	2020-02-08	Kerala	3	0	0	0	3

In [10]:
```
1 data_1.tail(10)
```

Out[10]:

	Date	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
16840	2021-07-07	Puducherry	0	0	114673	1763	118227
16841	2021-07-07	Punjab	0	0	578590	16131	596736
16842	2021-07-07	Rajasthan	0	0	942882	8942	952836
16843	2021-07-07	Sikkim	0	0	19200	309	21403
16844	2021-07-07	Tamil Nadu	0	0	2435872	33132	2503481
16845	2021-07-07	Telangana	0	0	613124	3703	628282
16846	2021-07-07	Tripura	0	0	63964	701	68612
16847	2021-07-07	Uttarakhand	0	0	332006	7338	340882
16848	2021-07-07	Uttar Pradesh	0	0	1682130	22656	1706818
16849	2021-07-07	West Bengal	0	0	1472132	17834	1507241

In [11]:
```
1 data_1.describe()
```

Out[11]:

	Cured	Deaths	Confirmed
count	1.685000e+04	16850.000000	1.685000e+04
mean	2.360353e+05	3485.222552	2.583667e+05
std	5.225438e+05	9330.541749	5.672808e+05
min	0.000000e+00	0.000000	0.000000e+00
25%	2.658500e+03	22.000000	3.644750e+03
50%	2.889500e+04	453.000000	3.336150e+04
75%	2.537510e+05	3071.250000	2.666530e+05
max	5.872268e+06	123531.000000	6.113335e+06

In [12]:
```
1 data_1.isnull().sum()
```

Out[12]:
```
Date                       0
State/UnionTerritory       0
ConfirmedIndianNational    0
ConfirmedForeignNational   0
Cured                      0
Deaths                     0
Confirmed                  0
dtype: int64
```

In [13]:
```
1 pd.DataFrame(data_1,columns=['Cured'])
```

Out[13]:

	Cured
0	0
1	0
2	0
3	0
4	0
...	...
16845	613124
16846	63964
16847	332006
16848	1682130
16849	1472132

16850 rows × 1 columns

In [14]:
```
1 pd.DataFrame(data_1,columns=['Death'])
```

Out[14]:

	Death
0	NaN
1	NaN
2	NaN
3	NaN
4	NaN
...	...
16845	NaN
16846	NaN
16847	NaN
16848	NaN
16849	NaN

16850 rows × 1 columns

In [15]:
```
1 pd.DataFrame(data_1,columns=['Confirmed'])
```

Out[15]:

	Confirmed
0	1
1	1
2	2
3	3
4	3
...	...
16845	628282
16846	68612
16847	340882
16848	1706818
16849	1507241

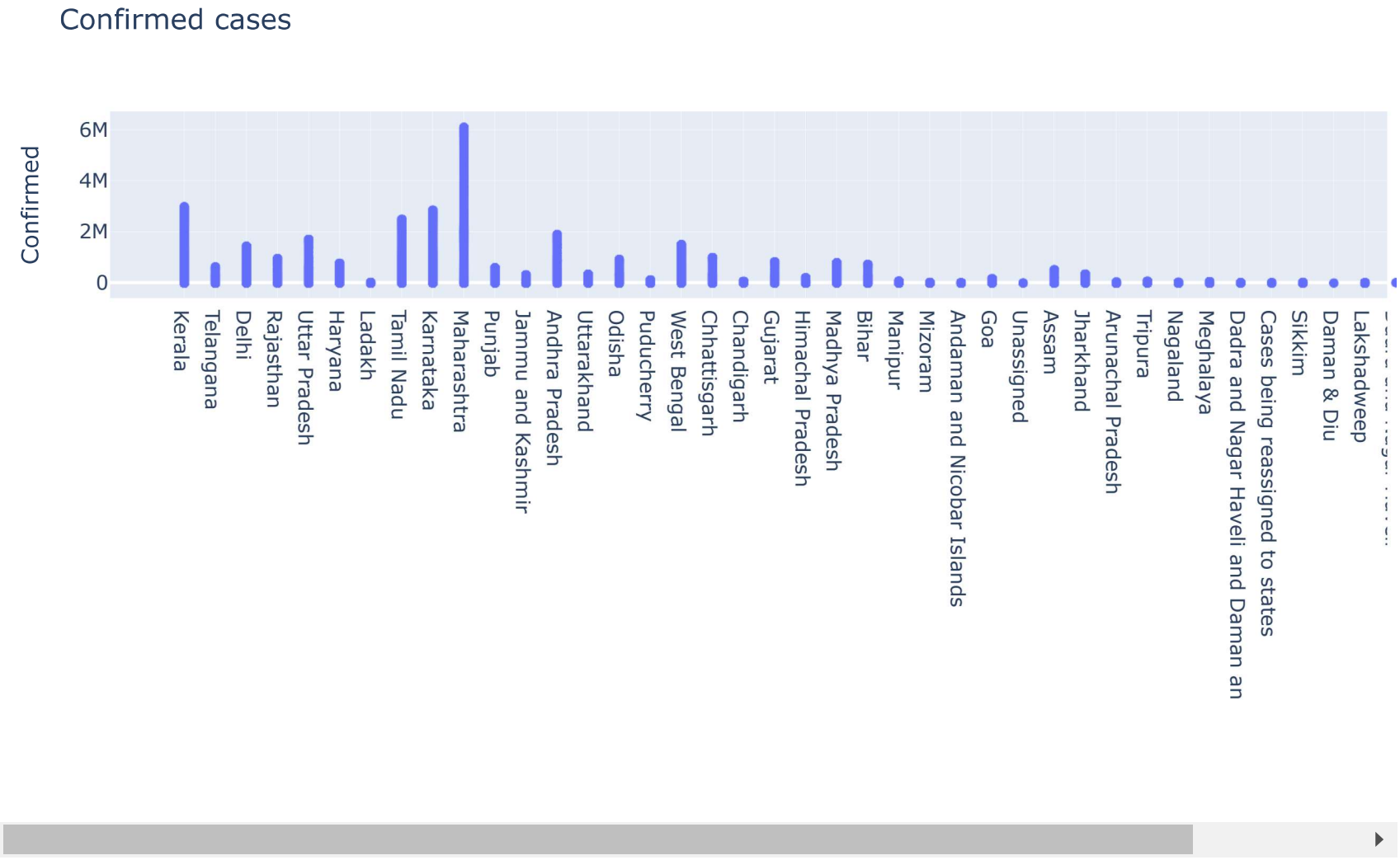
16850 rows × 1 columns

In [ ]:
```
1
```

Scatter Plot

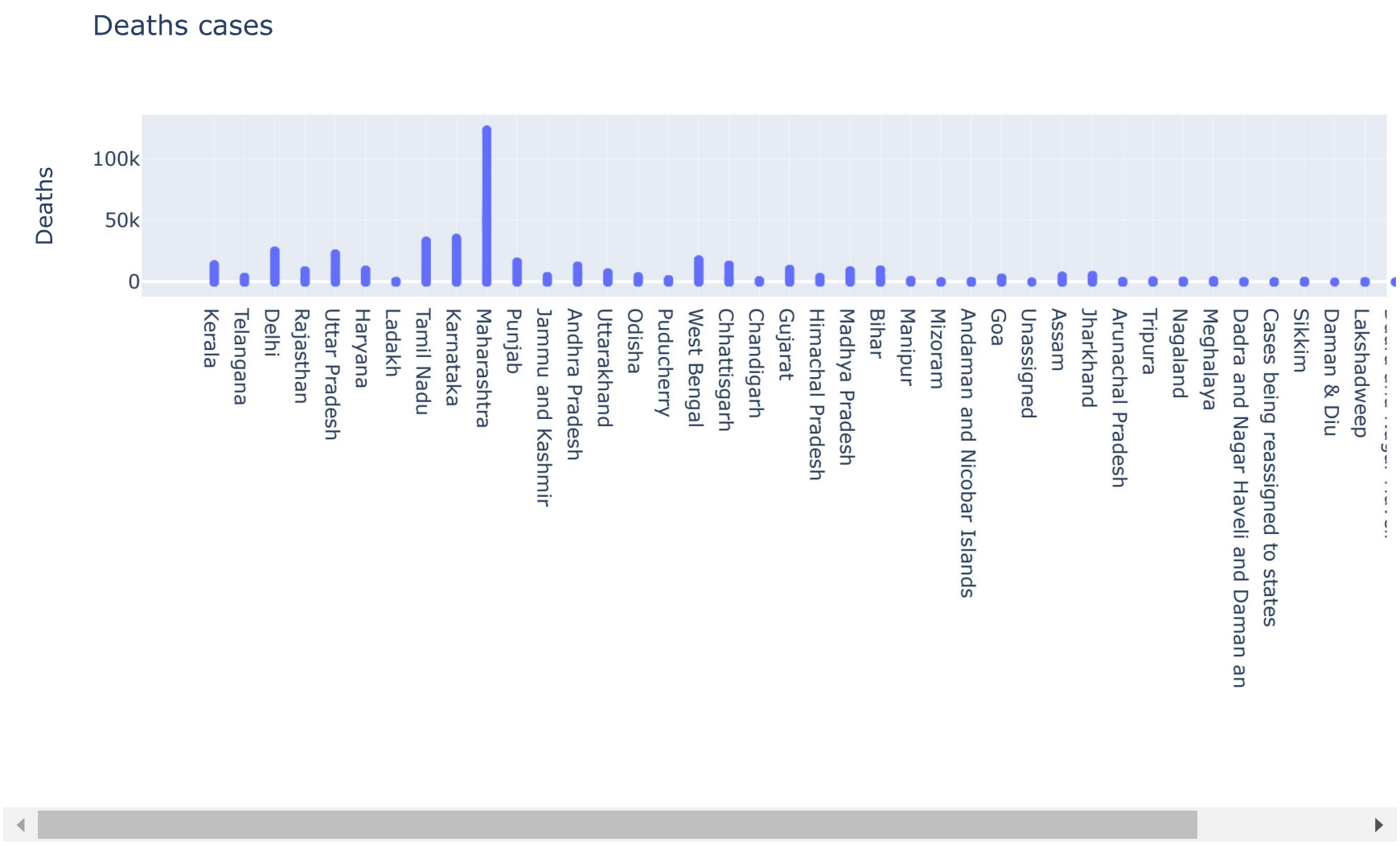
In [16]:

```
#Scatter plot in Confirmed Cases
px.scatter(x='State/UnionTerritory',y='Confirmed',data_frame=data_1,title='Confirmed cases')
```



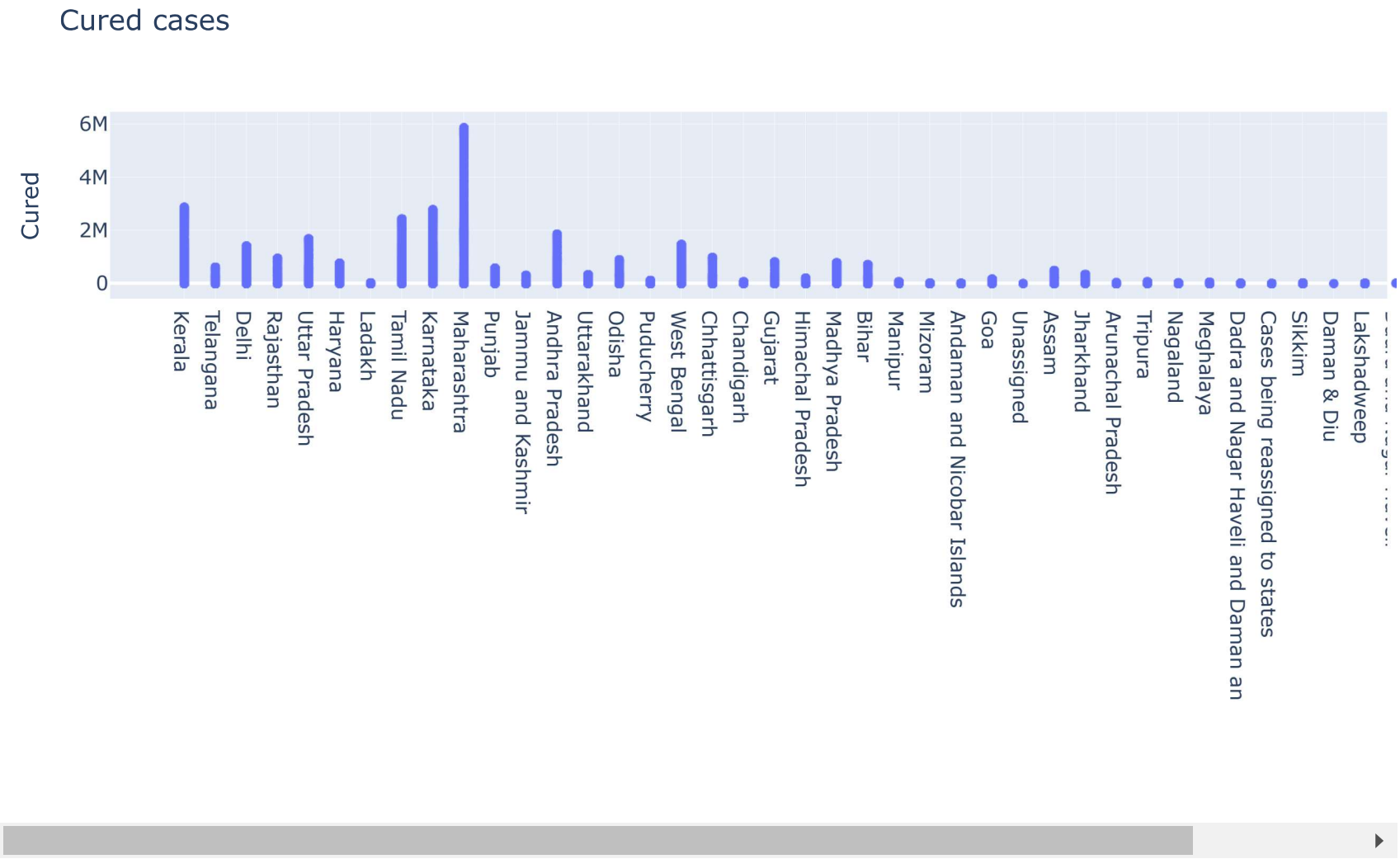
In [137]:

```
#Scatter plot in Deaths Cases
px.scatter(x='State/UnionTerritory',y='Deaths',data_frame=data_1,title='Deaths cases')
```



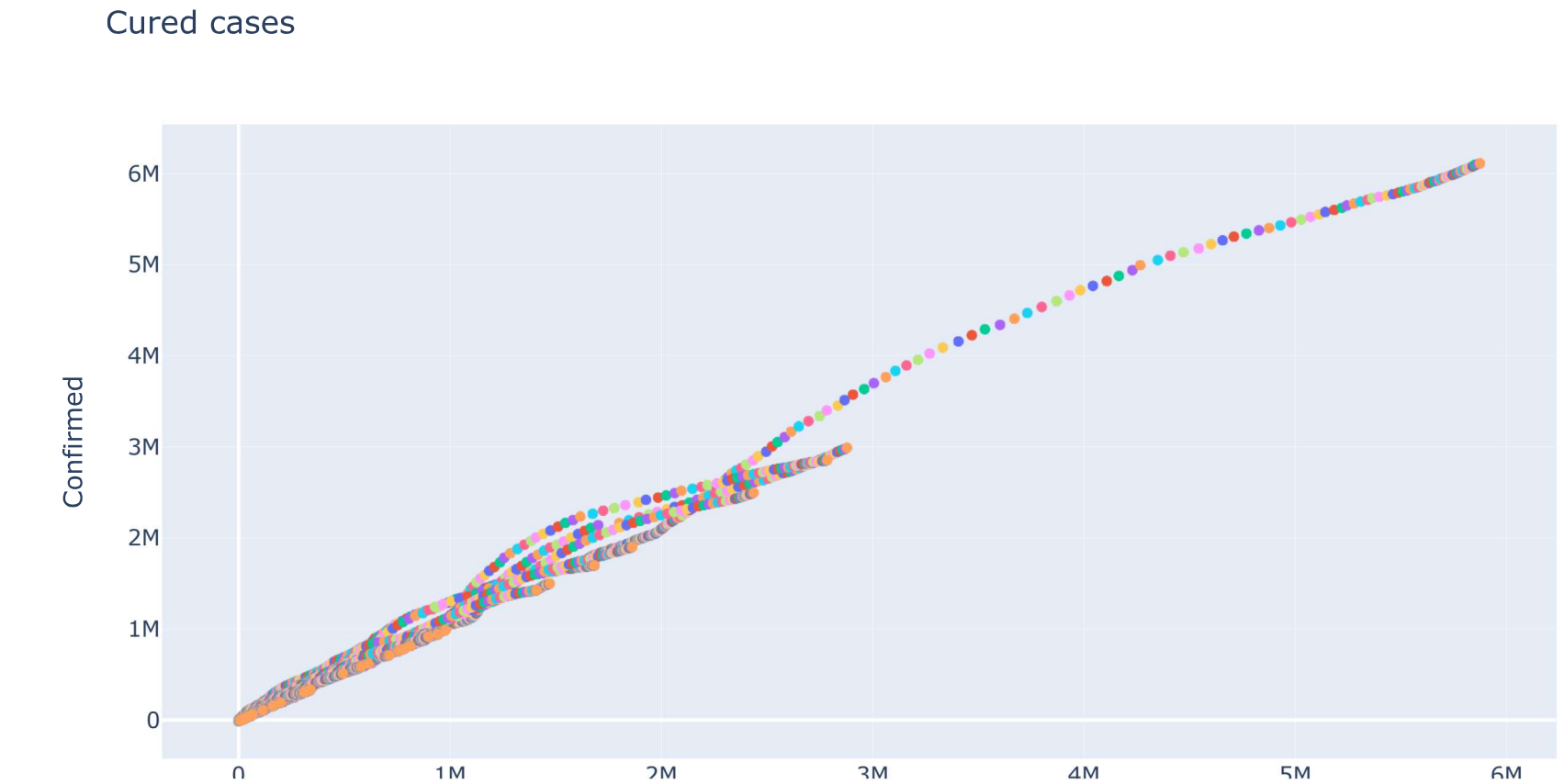
In [41]:

```
#Scatter plot in Cured Cases
px.scatter(x='State/UnionTerritory',y='Cured',data_frame=data_1,title='Cured cases')
```

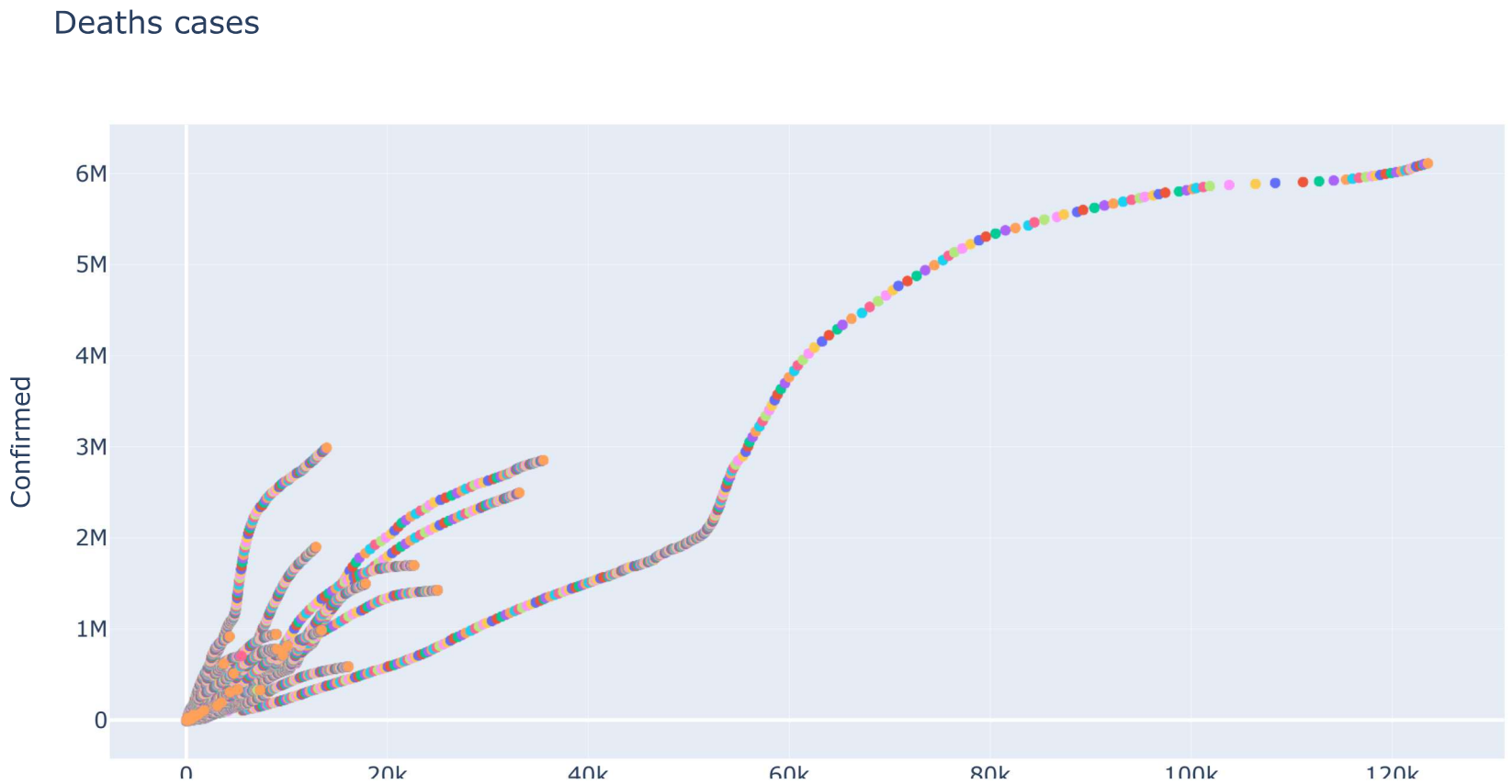


In [139]:

```
#Scatter plot in Cured Cases in Dates
px.scatter(x='Cured',y='Confirmed',data_frame=data_1,title='Cured cases',color='Date')
```



In [140]:
```
#Scatter plot in Deaths Cases
px.scatter(x='Deaths',y='Confirmed',data_frame=data_1,title='Deaths cases',color='Date')
```



In [ ]:
```

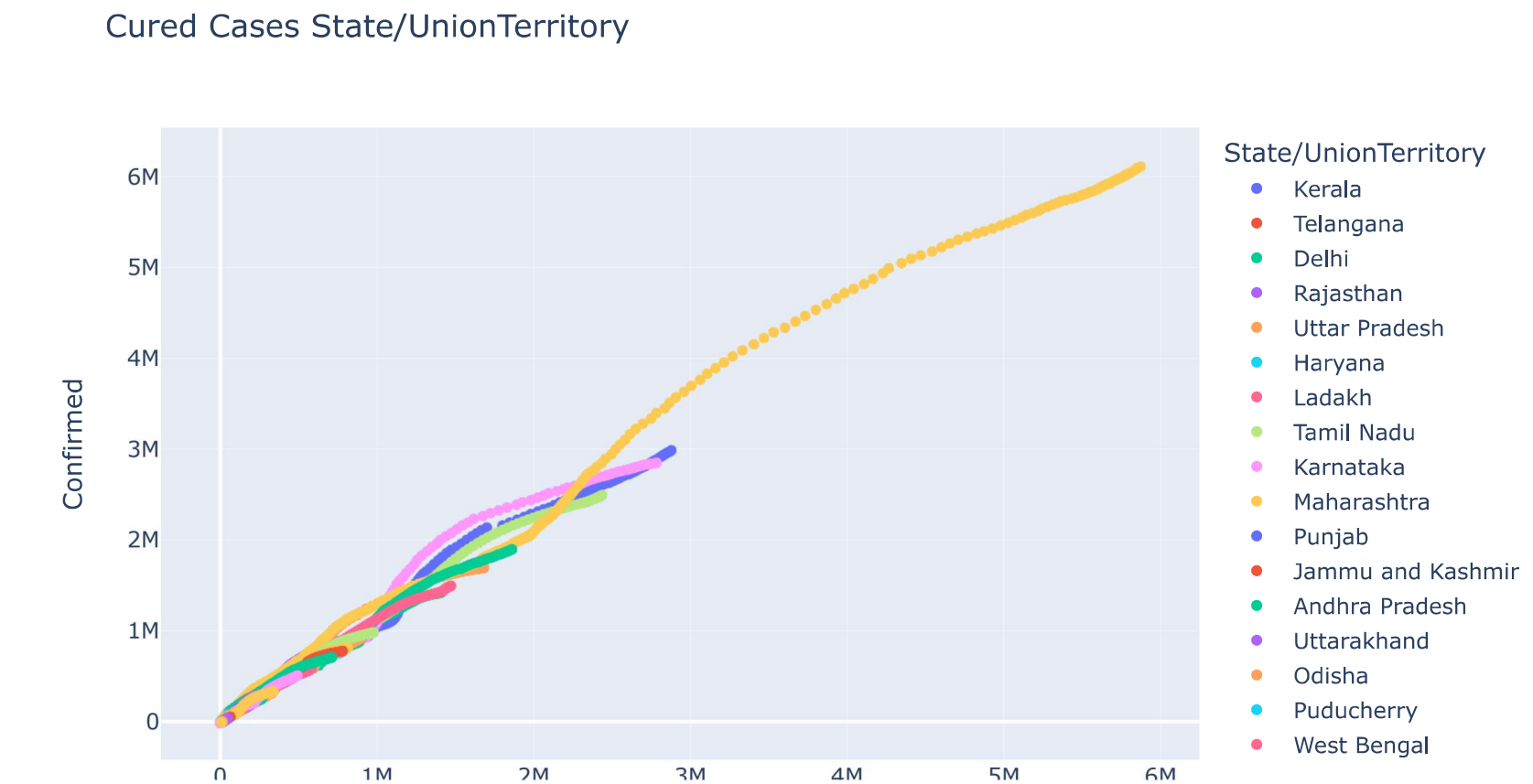
```

In [ ]:
```

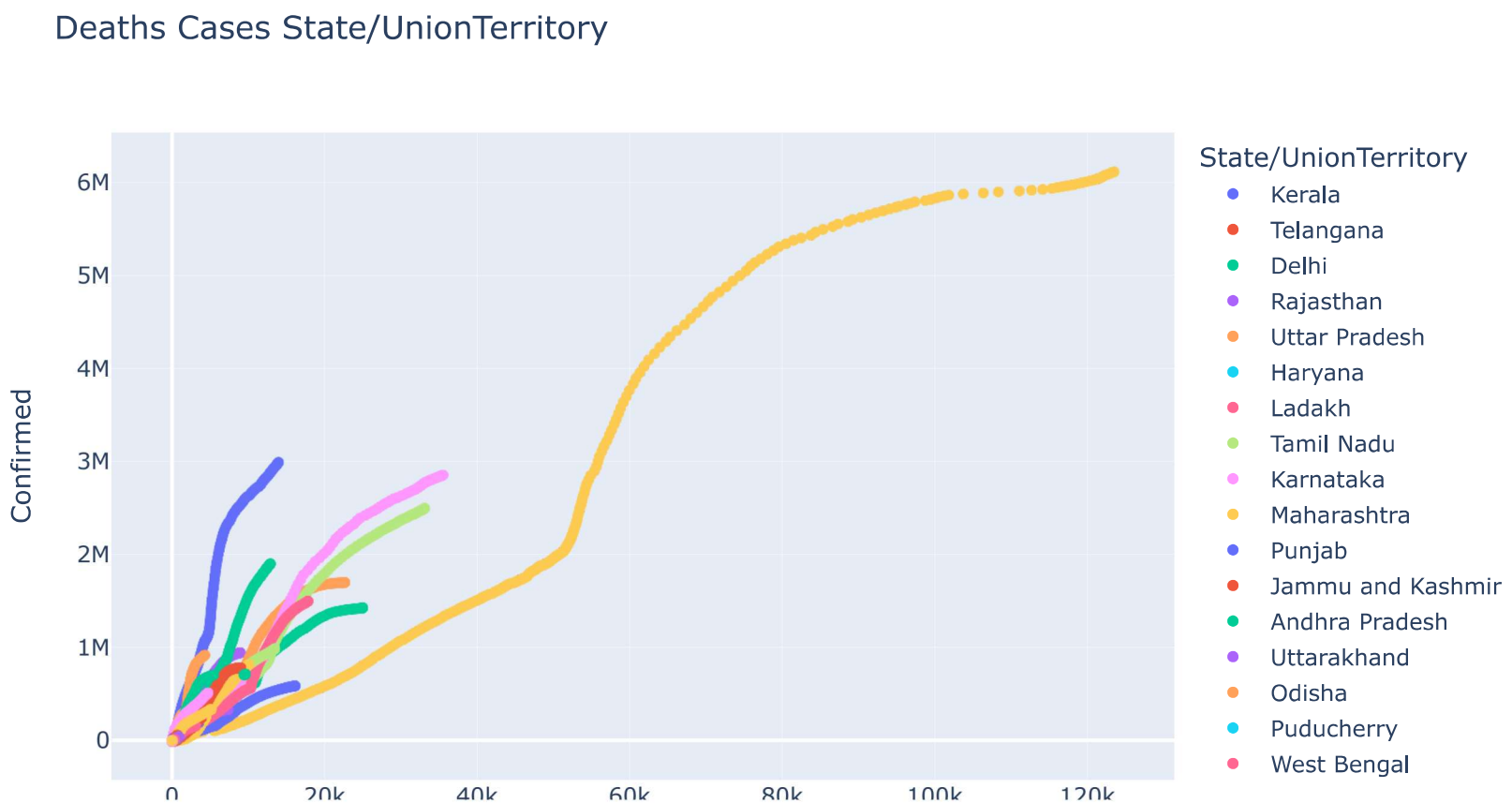
```

In [141]:

```
1 # Scatter Plot In State/Unoin Territory
2 px.scatter(x='Cured',y='Confirmed',data_frame=data_1,title='Cured Cases State/UnionTerritory',color='State/U
```



In [142]:
```
# Scatter Plot In State/Unoin Territory
px.scatter(x='Deaths',y='Confirmed',data_frame=data_1,title='Deaths Cases State/UnionTerritory',color='Stat
```

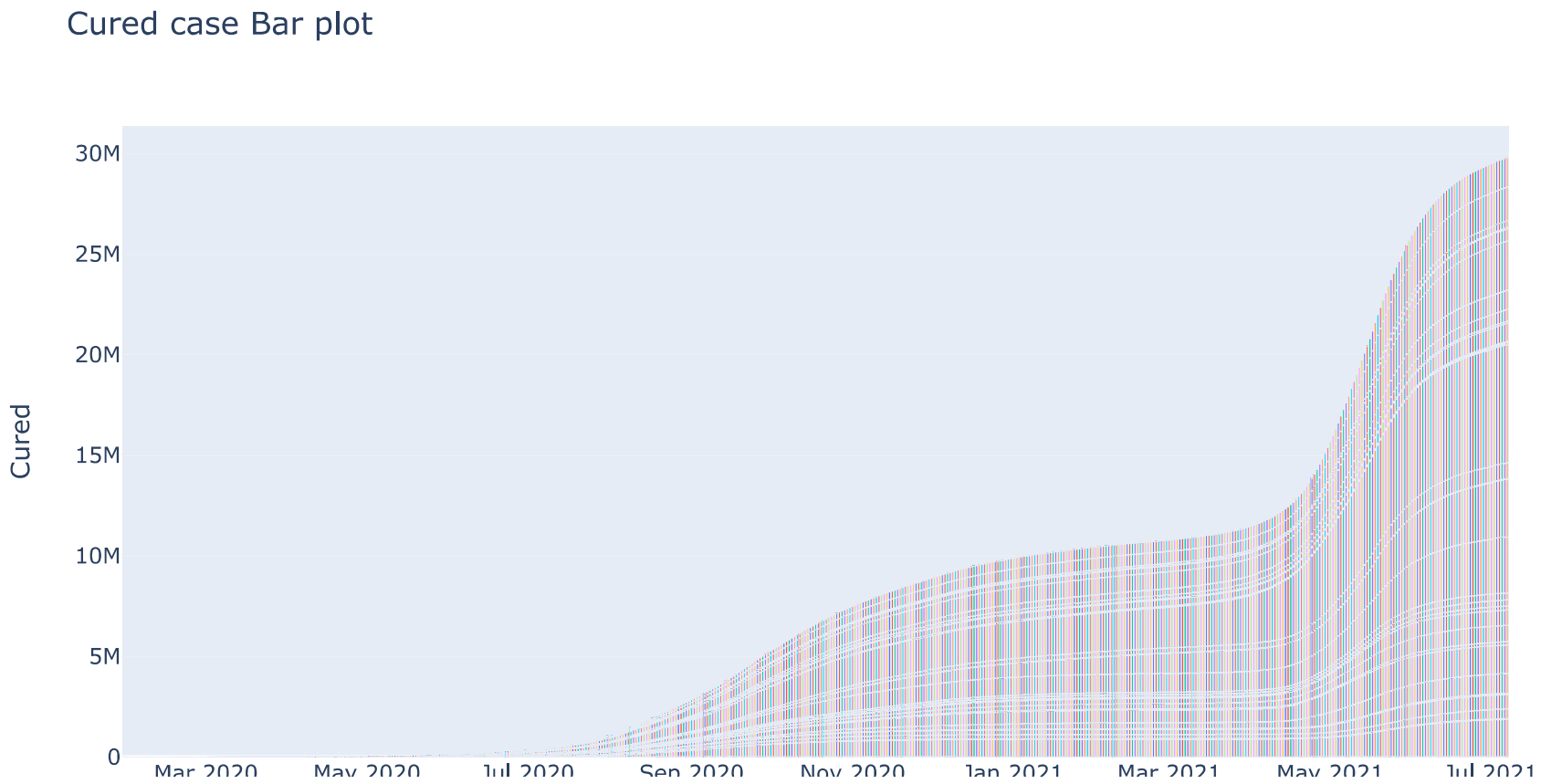


In [ ]:
```
1
```

Bar plot

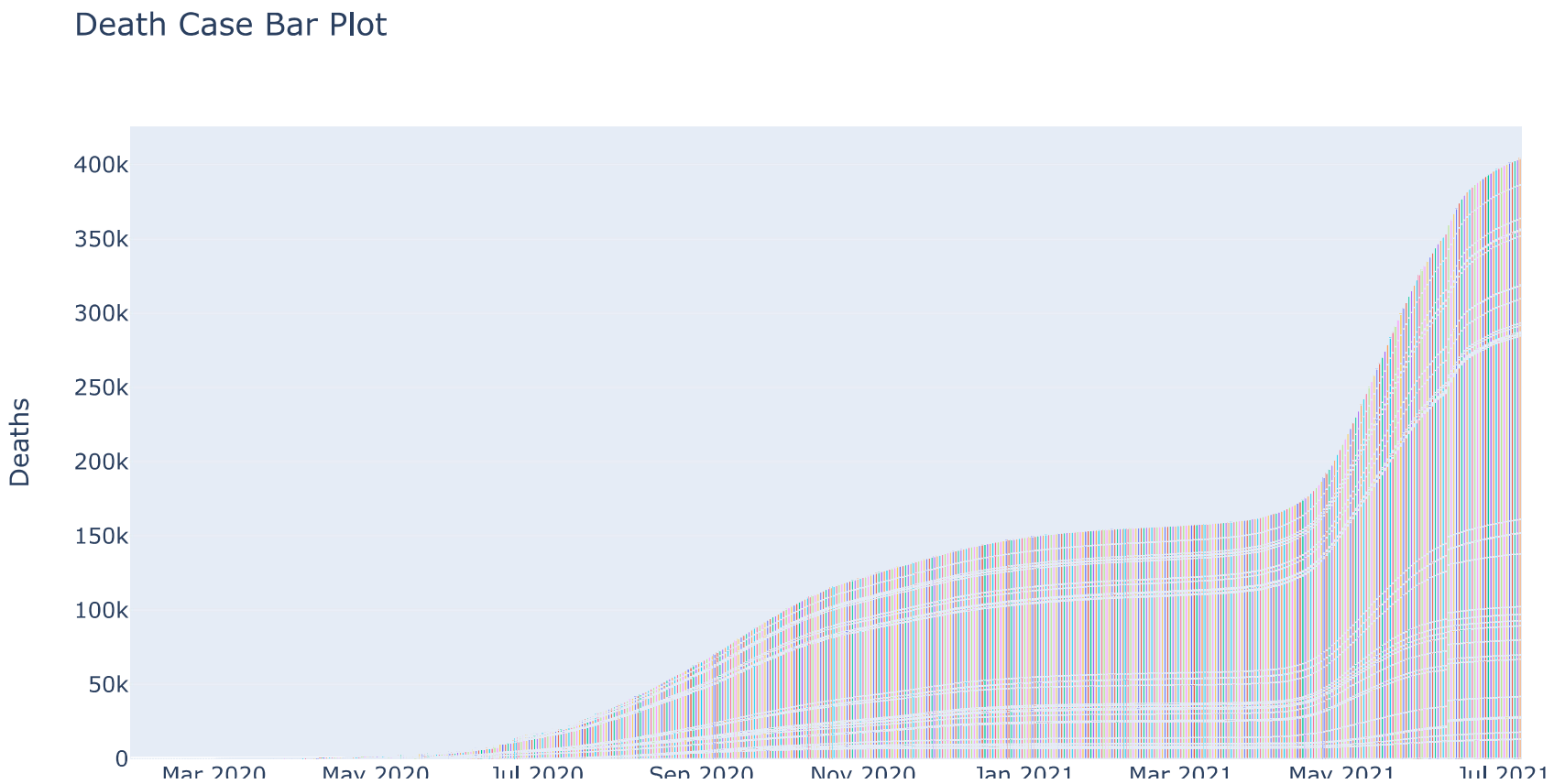
In [143]:

```
## Bar plot In Cured Cases
px.bar(x='Date',y='Cured',data_frame=data_1,color='Date',title='Cured case Bar plot')
```



In [144]:

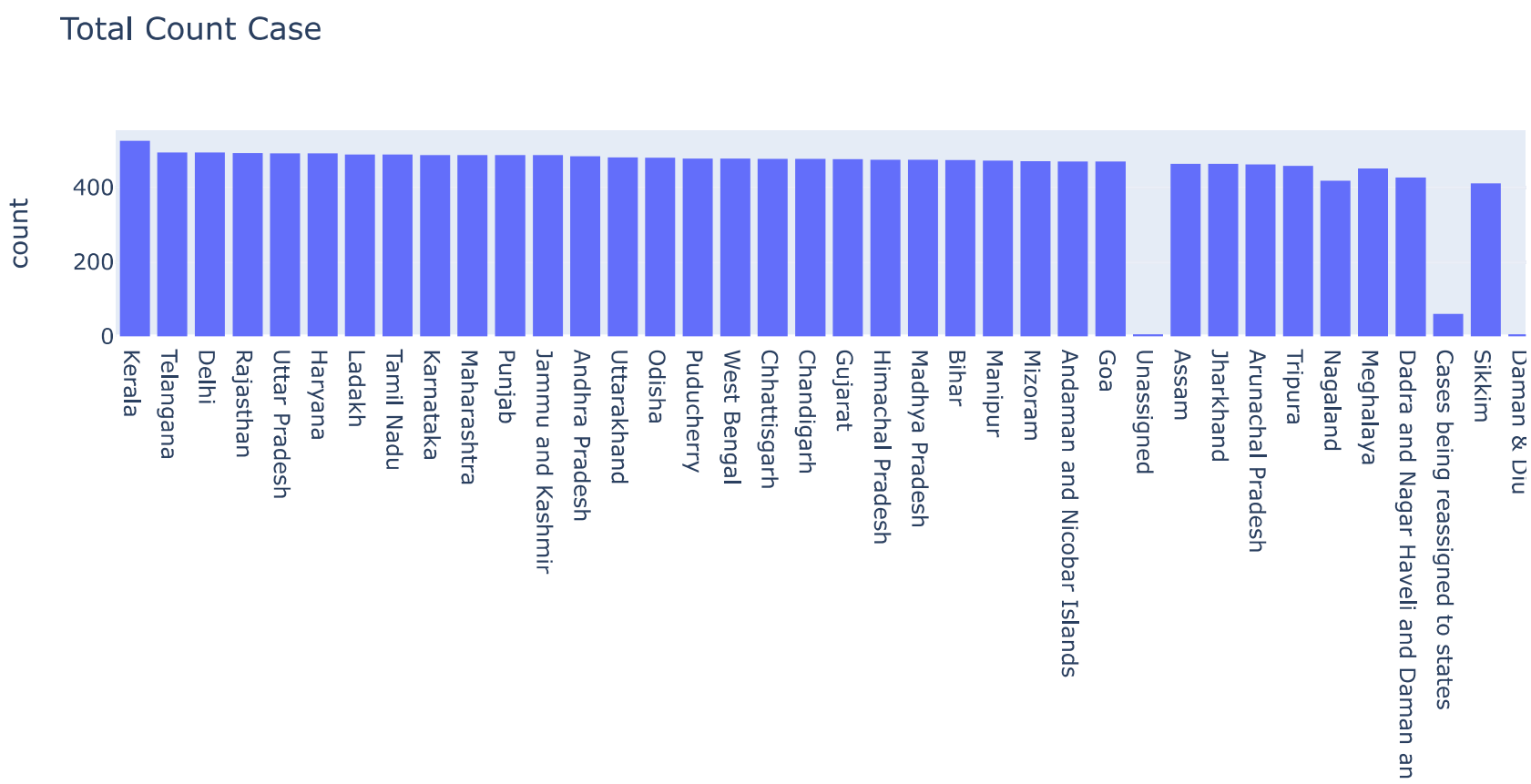
```
## Bar Plot In Deaths Cases
px.bar(x='Date',y='Deaths',data_frame=data_1,color='Date',title='Death Case Bar Plot')
```



Histogram

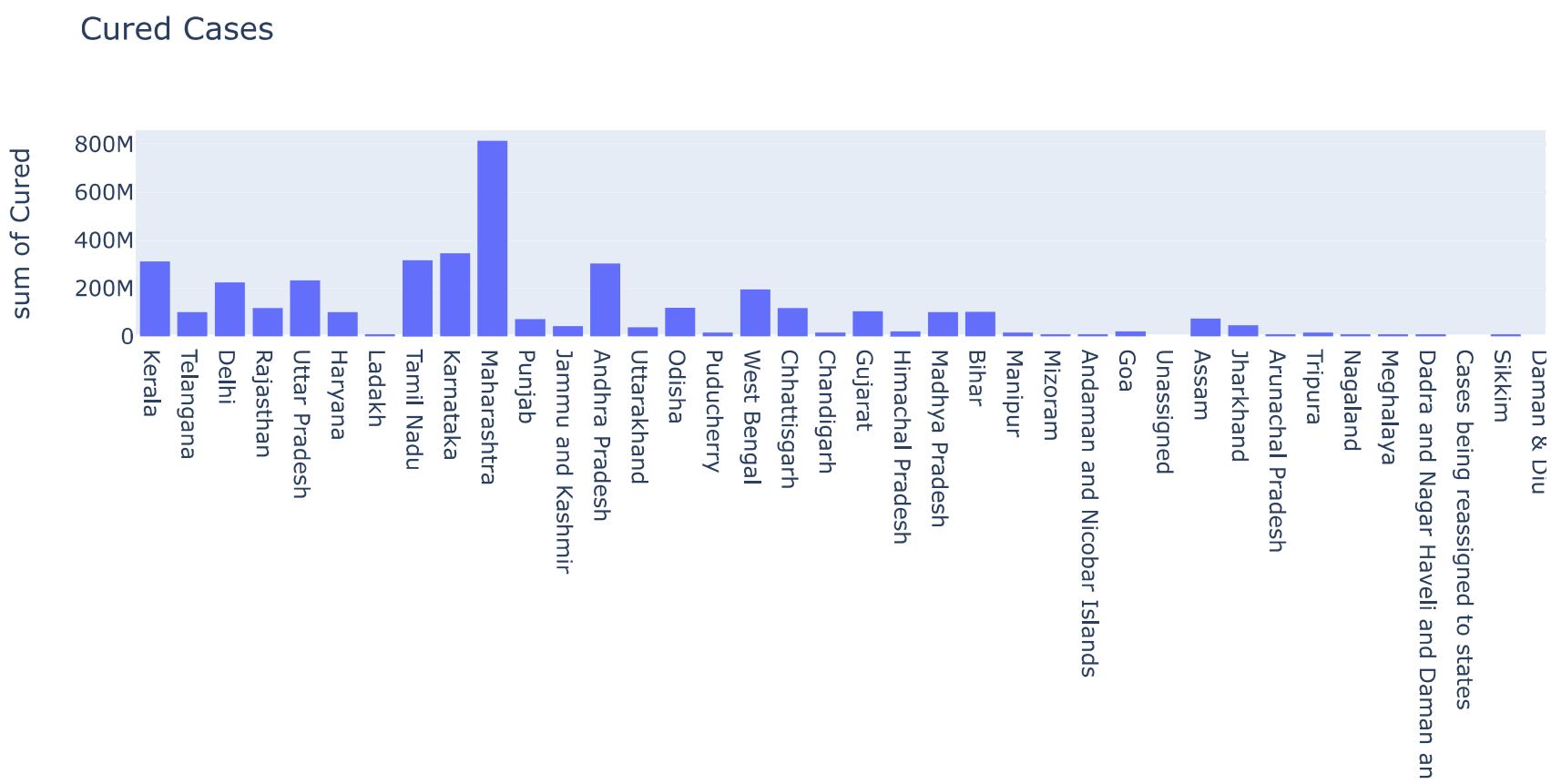
In [145]:

```
# Histogram plot
px.histogram(x='State/UnionTerritory',title='Total Count Case',data_frame=data_1)
```



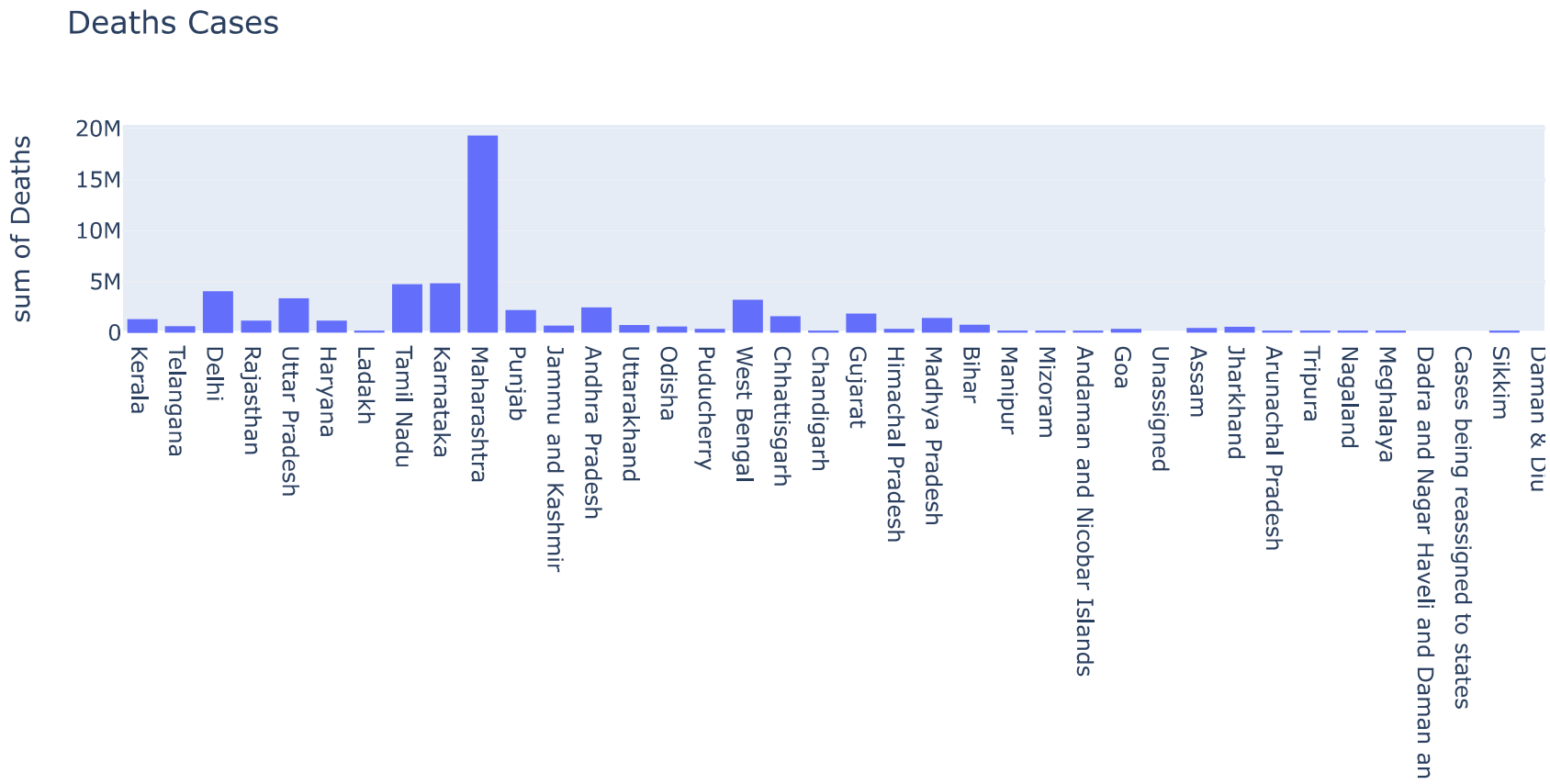
In [146]:

```
#Histogram plot in Cured Cases
px.histogram(x='State/UnionTerritory',y='Cured',title='Cured Cases',data_frame=data_1)
```



In [147]:

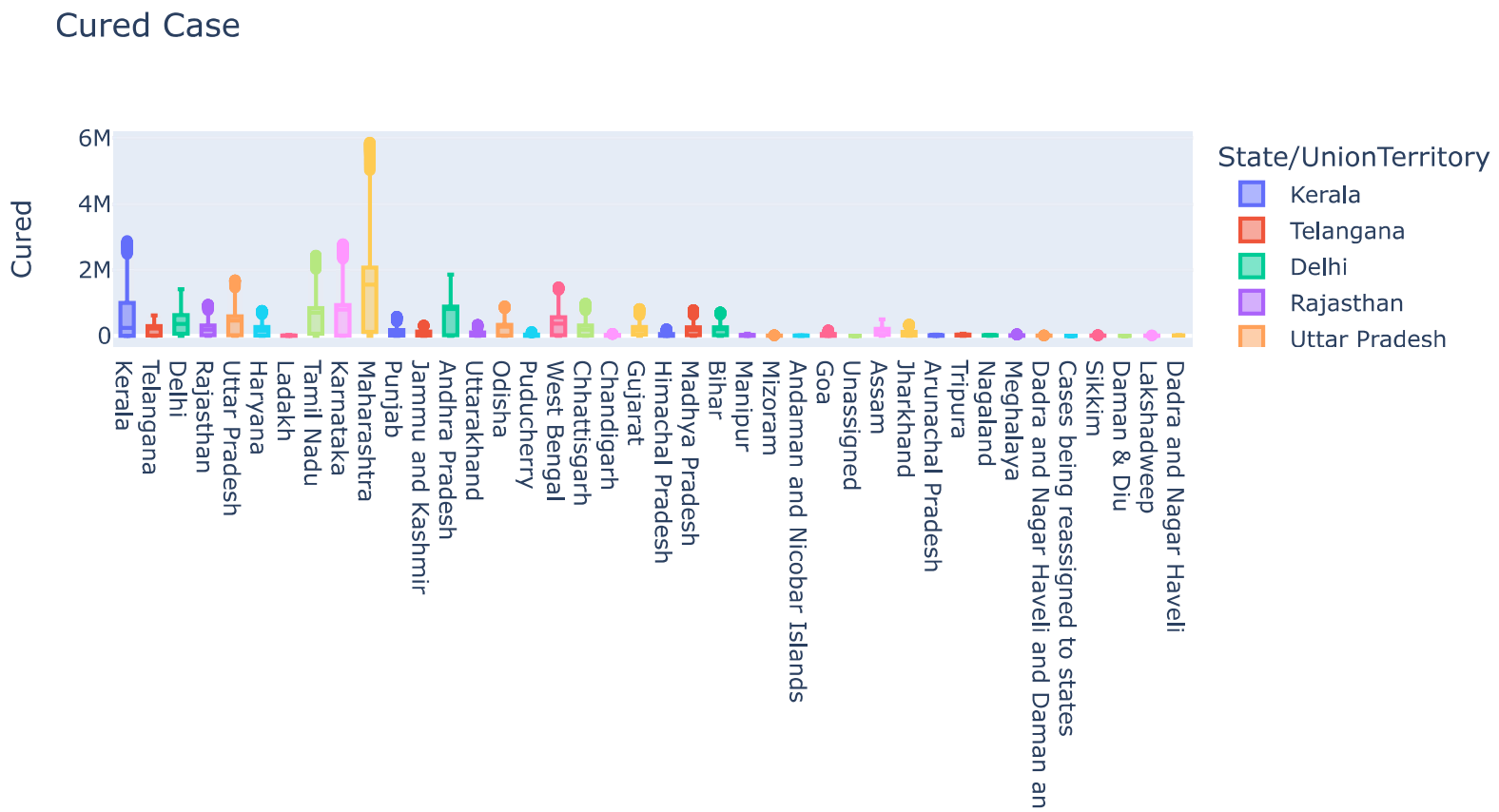
```
#Histogram in DEaths Cases
px.histogram(x='State/UnionTerritory',y='Deaths',title='Deaths Cases',data_frame=data_1)
```



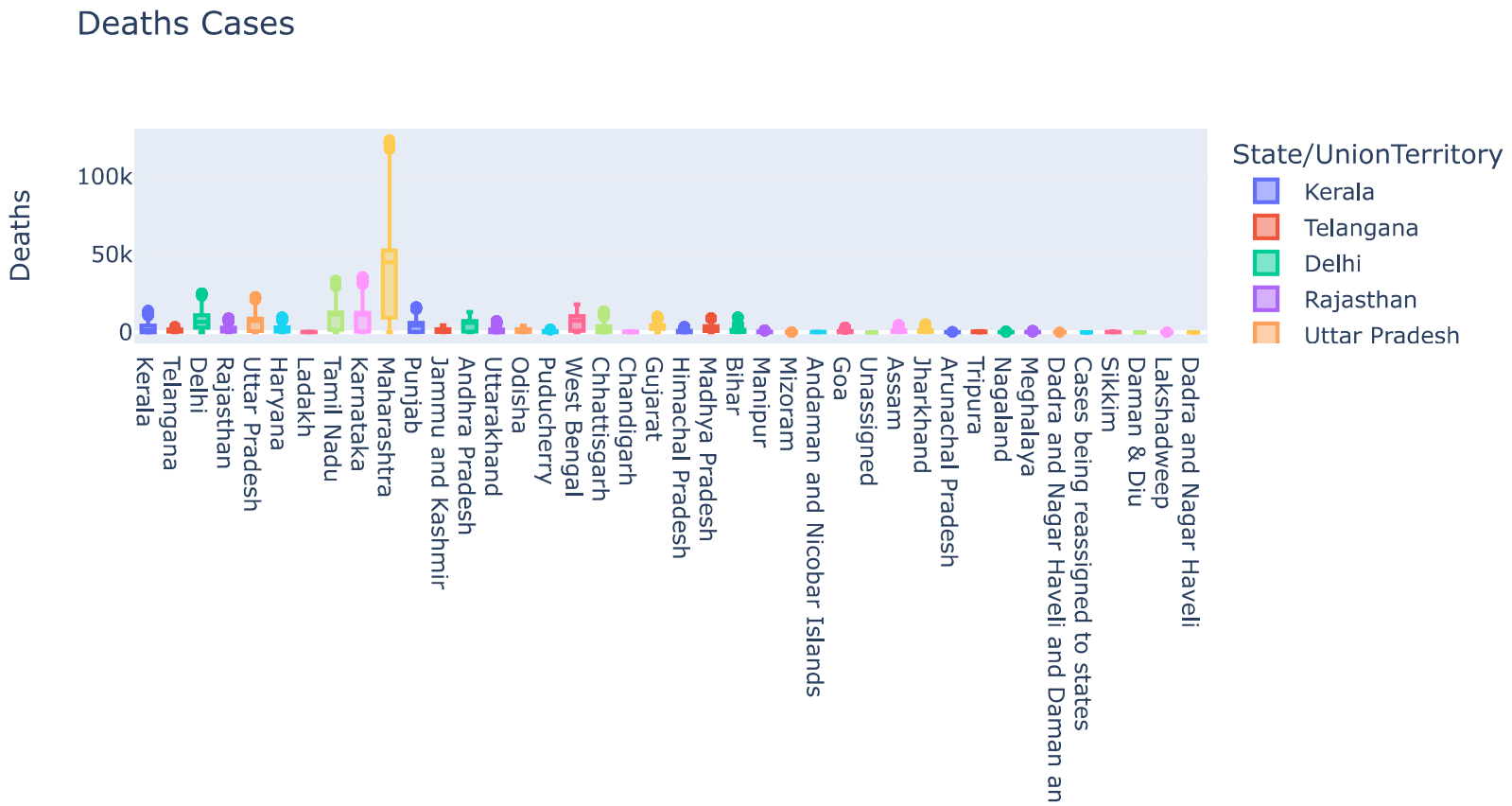
Box Plot

In [148]:

```
# Box Plot In Cured Cases
px.box(x='State/UnionTerritory',y='Cured',title='Cured Case',data_frame=data_1,color='State/UnionTerritory'
```



In [149]:
```
1 #Box plot in Deaths Cases
2 px.box(x='State/UnionTerritory',y='Deaths',title='Deaths Cases',data_frame=data_1,color='State/UnionTerritor
```



In [ ]:
```
1
```

In [ ]:
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1
```

In [ ]:
```
1
```

Maharastra Data

In [42]:
```
data_MH = data[data["State/UnionTerritory"]=='Maharashtra']
data_MH
```

Out[42]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
76	77	2020-03-09	6:00 PM	Maharashtra	2	0	0	0	2
91	92	2020-03-10	6:00 PM	Maharashtra	5	0	0	0	5
97	98	2020-03-11	6:00 PM	Maharashtra	2	0	0	0	2
120	121	2020-03-12	6:00 PM	Maharashtra	11	0	0	0	11
133	134	2020-03-13	6:00 PM	Maharashtra	14	0	0	0	14
...	...	...	...	...	...	...	...	...	...
16690	16691	2021-07-03	8:00 AM	Maharashtra	0	0	5836920	122353	6079352
16726	16727	2021-07-04	8:00 AM	Maharashtra	0	0	5845315	122724	6088841
16762	16763	2021-07-05	8:00 AM	Maharashtra	0	0	5848693	123030	6098177
16798	16799	2021-07-06	8:00 AM	Maharashtra	0	0	5861720	123136	6104917
16834	16835	2021-07-07	8:00 AM	Maharashtra	0	0	5872268	123531	6113335

486 rows × 9 columns

In [43]:
```
1 data_MH.replace('-','0',inplace=True)
2 data_MH
```

```
D:\anaconda3\lib\site-packages\pandas\core\frame.py:5238: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)
```

Out[43]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
76	77	2020-03-09	6:00 PM	Maharashtra	2	0	0	0	2
91	92	2020-03-10	6:00 PM	Maharashtra	5	0	0	0	5
97	98	2020-03-11	6:00 PM	Maharashtra	2	0	0	0	2
120	121	2020-03-12	6:00 PM	Maharashtra	11	0	0	0	11
133	134	2020-03-13	6:00 PM	Maharashtra	14	0	0	0	14
...	...	...	...	...	...	...	...	...	...
16690	16691	2021-07-03	8:00 AM	Maharashtra	0	0	5836920	122353	6079352
16726	16727	2021-07-04	8:00 AM	Maharashtra	0	0	5845315	122724	6088841
16762	16763	2021-07-05	8:00 AM	Maharashtra	0	0	5848693	123030	6098177
16798	16799	2021-07-06	8:00 AM	Maharashtra	0	0	5861720	123136	6104917
16834	16835	2021-07-07	8:00 AM	Maharashtra	0	0	5872268	123531	6113335

486 rows × 9 columns

In [ ]:
```
1
```

In [44]:
```
1 data_MH.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 486 entries, 76 to 16834
Data columns (total 9 columns):
 #   Column                   Non-Null Count  Dtype 
---  ------                   --------------  ----- 
 0   Sno                      486 non-null    int64 
 1   Date                     486 non-null    object
 2   Time                     486 non-null    object
 3   State/UnionTerritory     486 non-null    object
 4   ConfirmedIndianNational  486 non-null    object
 5   ConfirmedForeignNational  486 non-null    object
 6   Cured                    486 non-null    int64 
 7   Deaths                   486 non-null    int64 
 8   Confirmed                486 non-null    int64 
dtypes: int64(4), object(5)
memory usage: 38.0+ KB
```

In [ ]:
```
1
```

Type *Markdown* and LaTeX: α^2

In [ ]:
```
1
```

In [45]:
```
1 data_MH
```

Out[45]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
76	77	2020-03-09	6:00 PM	Maharashtra	2	0	0	0	2
91	92	2020-03-10	6:00 PM	Maharashtra	5	0	0	0	5
97	98	2020-03-11	6:00 PM	Maharashtra	2	0	0	0	2
120	121	2020-03-12	6:00 PM	Maharashtra	11	0	0	0	11
133	134	2020-03-13	6:00 PM	Maharashtra	14	0	0	0	14
...	...	...	...	...	...	...	...	...	...
16690	16691	2021-07-03	8:00 AM	Maharashtra	0	0	5836920	122353	6079352
16726	16727	2021-07-04	8:00 AM	Maharashtra	0	0	5845315	122724	6088841
16762	16763	2021-07-05	8:00 AM	Maharashtra	0	0	5848693	123030	6098177
16798	16799	2021-07-06	8:00 AM	Maharashtra	0	0	5861720	123136	6104917
16834	16835	2021-07-07	8:00 AM	Maharashtra	0	0	5872268	123531	6113335

486 rows × 9 columns

In [ ]:
```
1
```

In [46]:
```
1 data_MH.isnull().sum()
```

Out[46]:
```
Sno                         0
Date                        0
Time                        0
State/UnionTerritory        0
ConfirmedIndianNational     0
ConfirmedForeignNational    0
Cured                       0
Deaths                      0
Confirmed                   0
dtype: int64
```

In [47]:
```
1 data_MH.columns
```

Out[47]:
```
Index(['Sno', 'Date', 'Time', 'State/UnionTerritory',
       'ConfirmedIndianNational', 'ConfirmedForeignNational', 'Cured',
       'Deaths', 'Confirmed'],
      dtype='object')
```

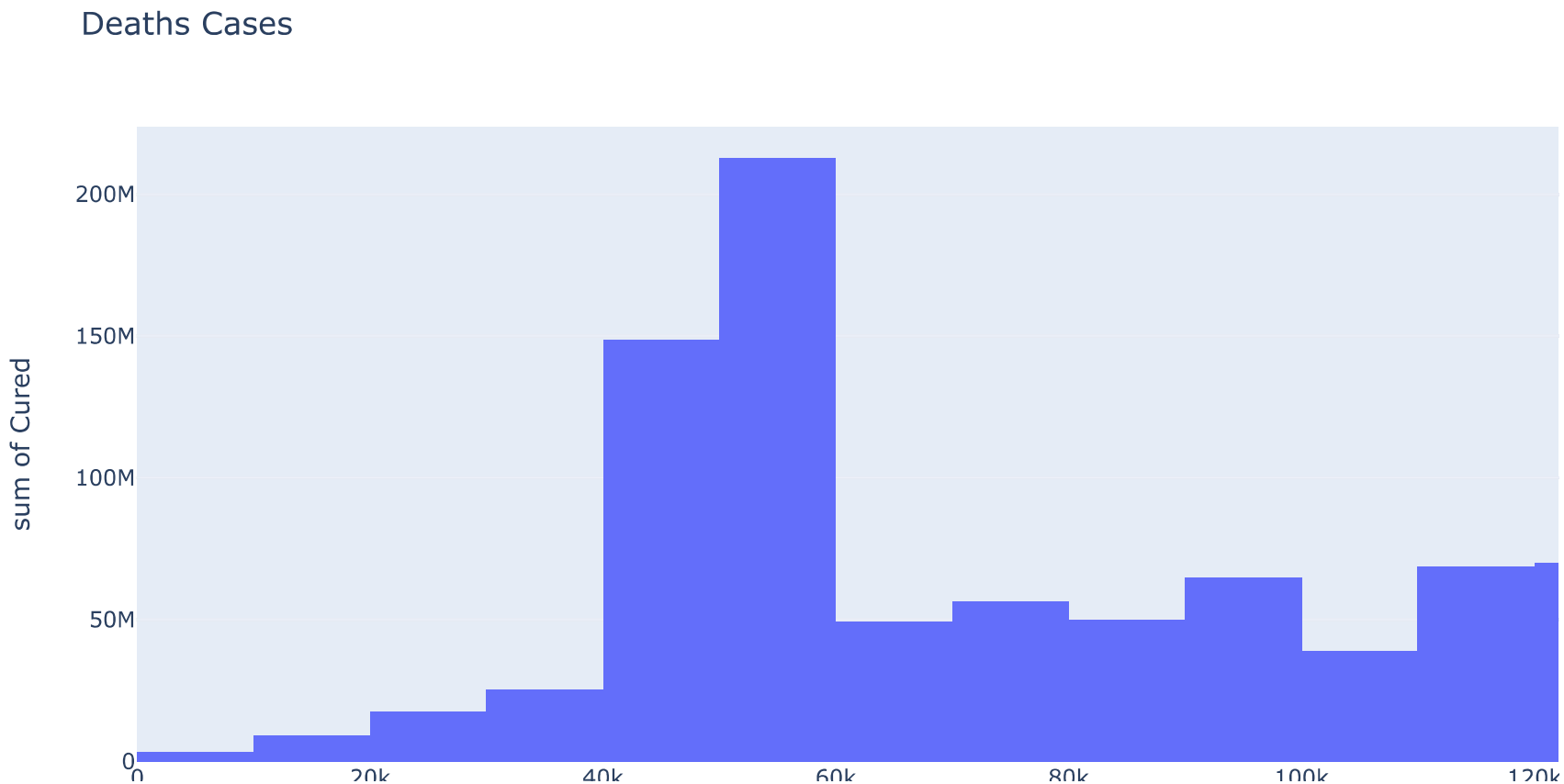
In [48]:
```
1 data_MH.describe()
```

Out[48]:

	Sno	Cured	Deaths	Confirmed
count	486.000000	4.860000e+02	486.000000	4.860000e+02
mean	8191.660494	1.674463e+06	39741.835391	1.870149e+06
std	4955.978167	1.710989e+06	31861.231600	1.831266e+06
min	77.000000	0.000000e+00	0.000000	2.000000e+00
25%	3884.000000	1.197165e+05	9299.500000	2.187718e+05
50%	8138.500000	1.556812e+06	44884.500000	1.706879e+06
75%	12470.000000	2.066541e+06	52468.500000	2.216942e+06
max	16835.000000	5.872268e+06	123531.000000	6.113335e+06

Histogram In Maharashrta Deaths Cases

In [49]:
```
## Histogram in Deaths cases
px.histogram(x='Deaths',y='Cured', title='Deaths Cases ',data_frame=data_MH)
```

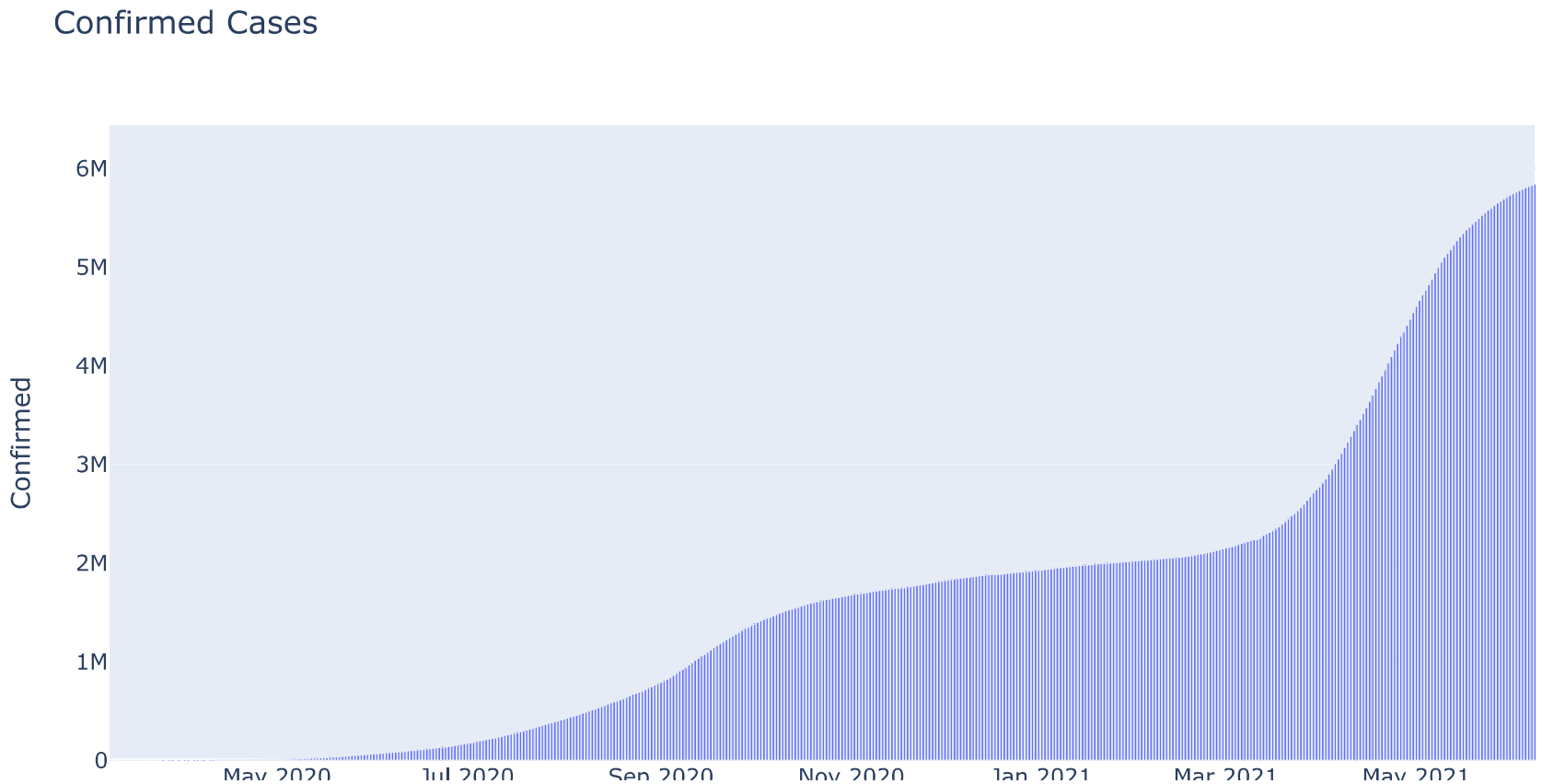


In [ ]:
```

```

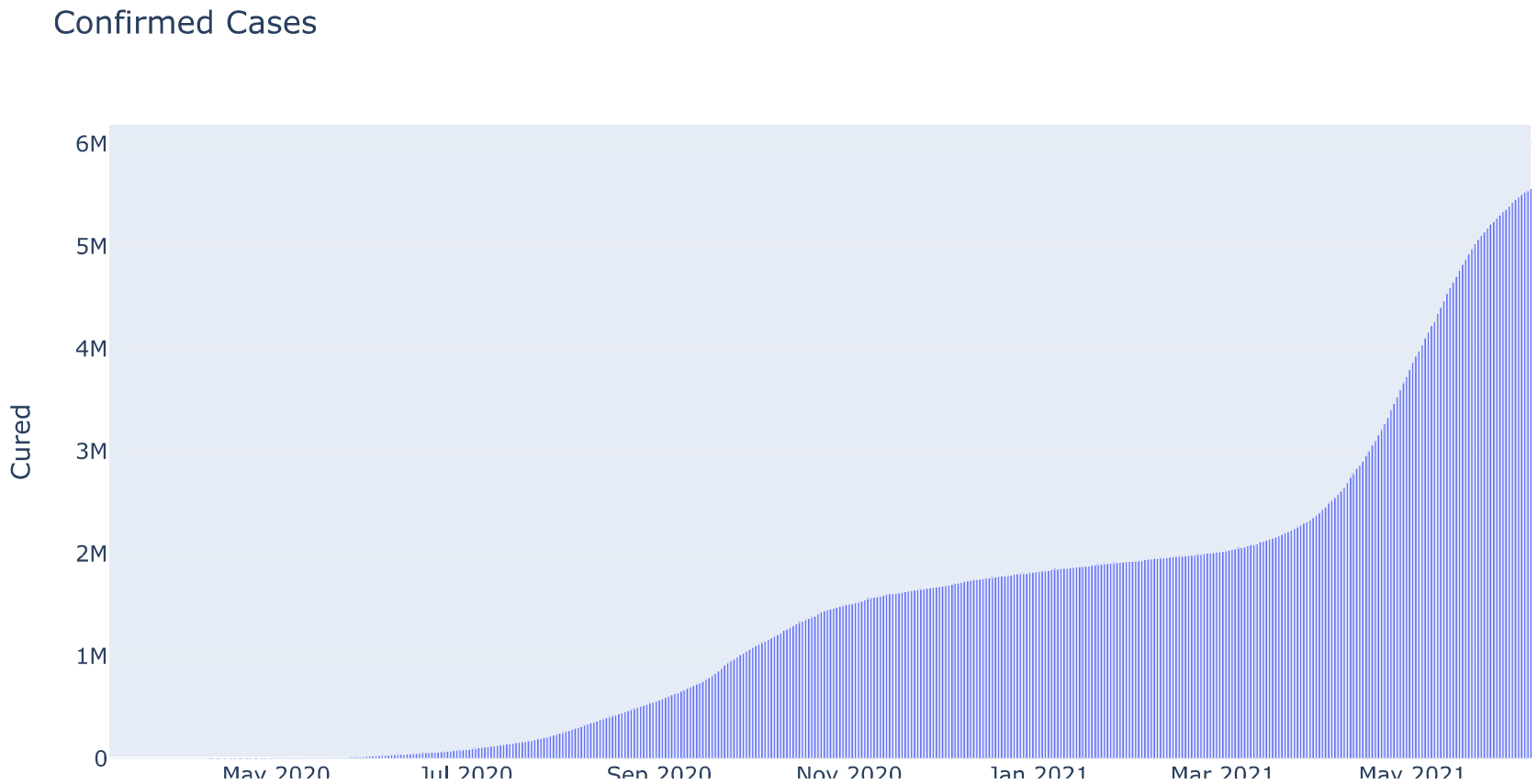
In [50]:

```
## Bar Plot In Confirmed Cases
px.bar(x='Date',y='Confirmed',data_frame=data_MH,title='Confirmed Cases')
```



In [51]:

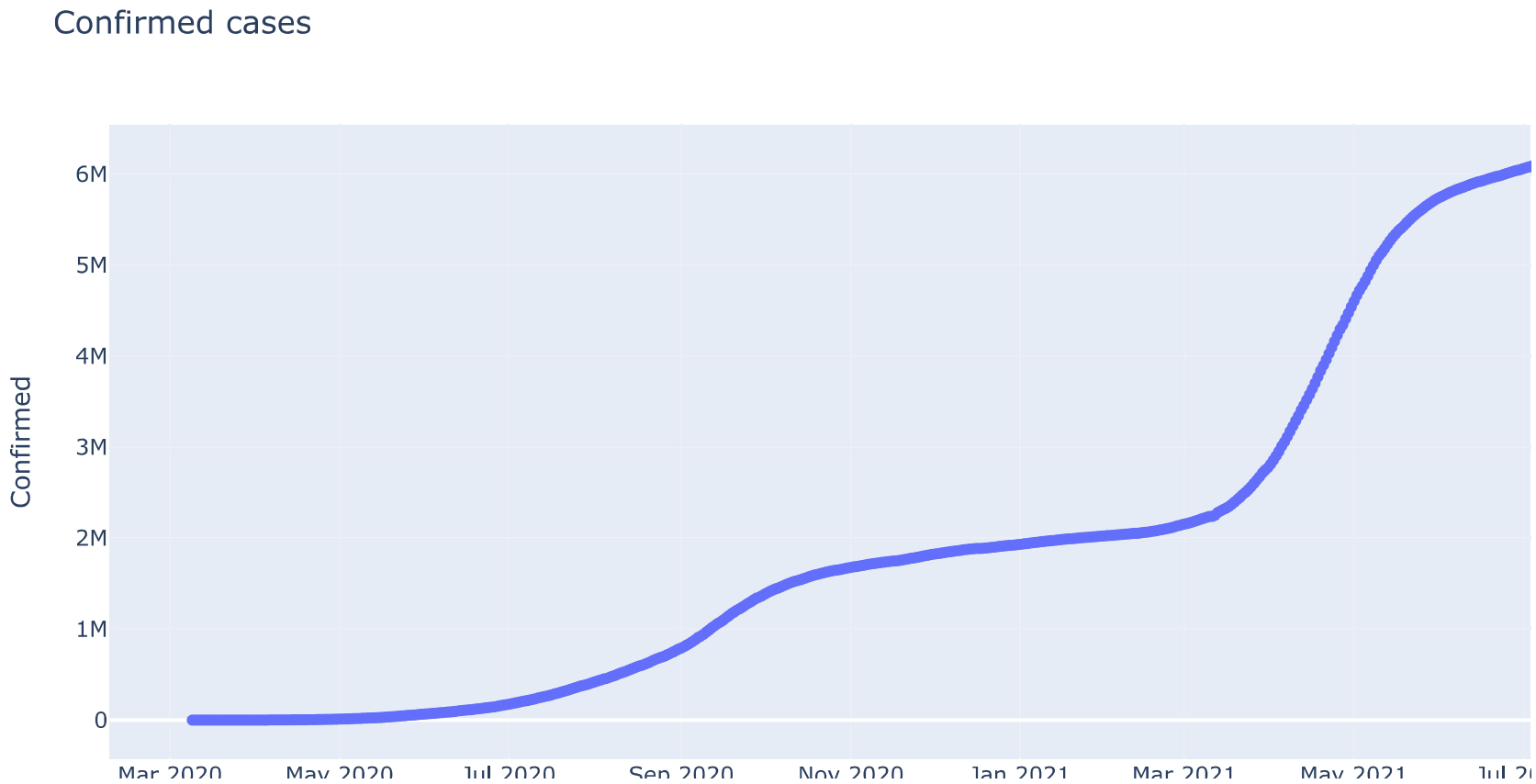
```
## Bar Plot In Confirmed Cases
px.bar(x='Date',y='Cured',data_frame=data_MH,title='Confirmed Cases')
```



Scatter Plot

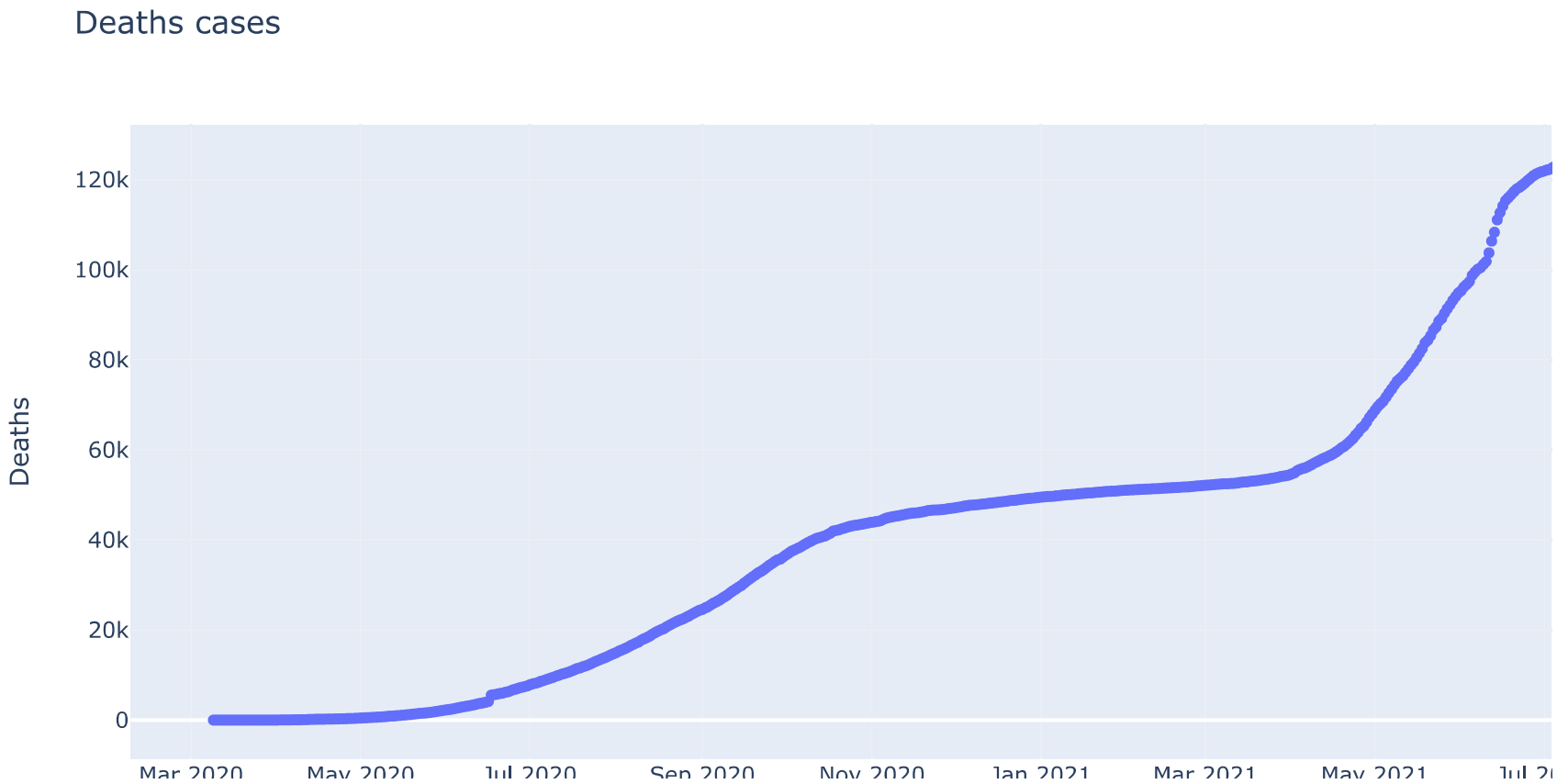
In [54]:

```
#Scatter plot in Confirmed Cases
px.scatter(x='Date',y='Confirmed',data_frame=data_MH,title='Confirmed cases')
```

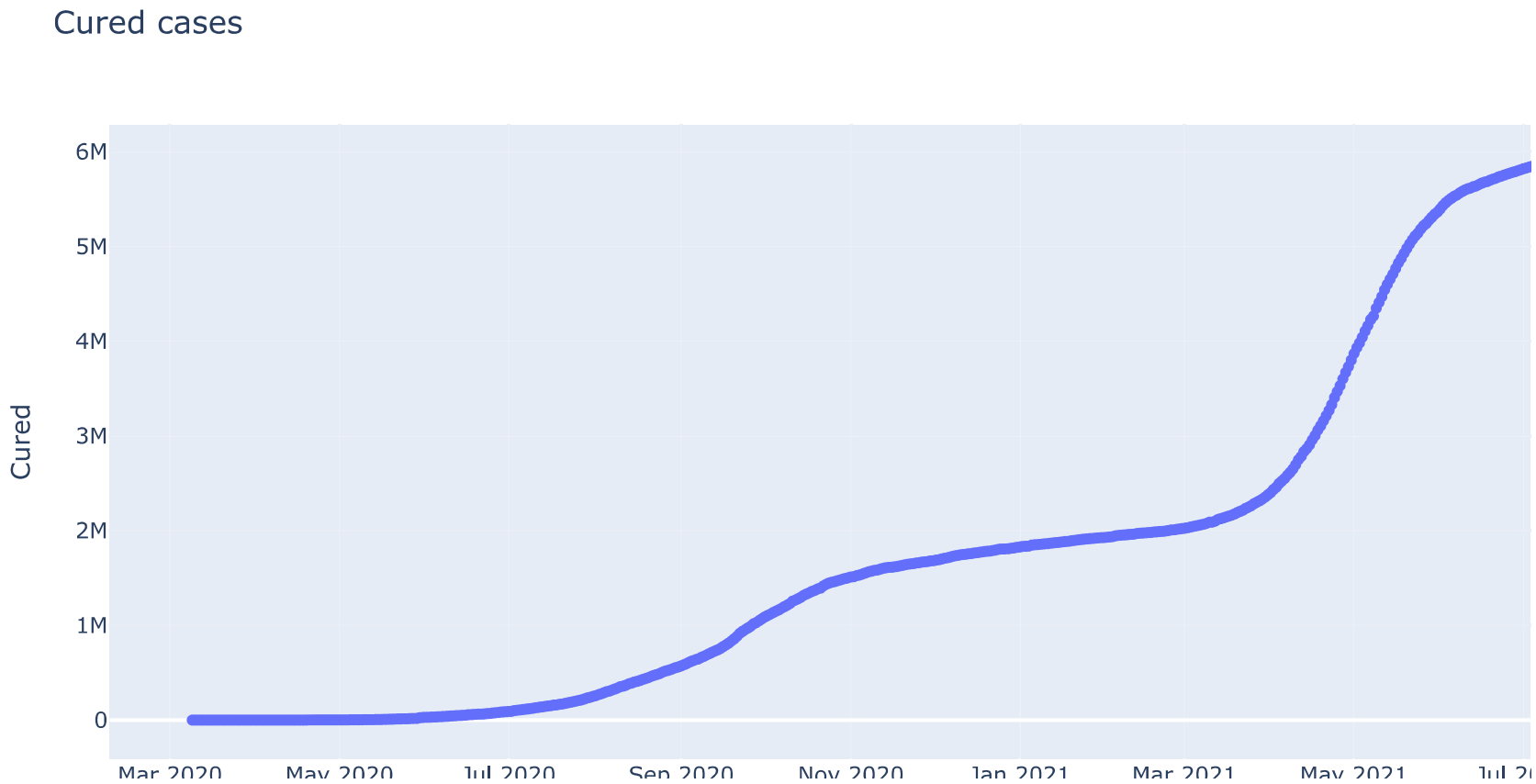


In [55]:

```
#Scatter plot in Daths Cases
px.scatter(x='Date',y='Deaths',data_frame=data_MH,title='Deaths cases')
```



In [56]:
```
#Scatter plot in Cured Cases
px.scatter(x='Date',y='Cured',data_frame=data_MH,title='Cured cases')
```



In [ ]:
```

```

In [ ]:
```

```