

Our contingency table...

	Deaths	Non Deaths
Close to sewer	224	482
Far from sewer	436	1047

```
# Now let us get our p-value!  
# ... when doing data science in Python, it is common convention to use  
#.    "_" characters to mark variables whose values we don't need.  
  
from scipy.stats import chi2_contingency  
chi_square, p_value, _, _ = chi2_contingency(contingency_table)  
print(f"Our p-value: {p_value}")  
print(f"Our Chi-squared value: {chi_square}")
```

Our p-value: 0.28927858447134214  
Our Chi-squared value: 1.1229758183695626

Our contingency table...

	Deaths 1849	Deaths 1854
Mostly SV	3708	3726.0
Mostly Lam	2108	895.0

Our contingency table...

	Deaths	Non Deaths
Close to pump	492	214
Far from pump	303	1180

```
# Task 3: Determine if there is a statistically signif  
  
from scipy.stats import chi2_contingency  
  
# Now let us get our p-value!  
# ... when doing data science in Python, it is common  
#.    "_" characters to mark variables whose values we  
chi_square, p_value, _, _ = chi2_contingency(contingen  
print(f"Our p-value: {p_value}")  
print(f"Our Chi-squared value: {chi_square}")
```

Our p-value: 1.2325783049887838e-79  
Our Chi-squared value: 357.0551926130695

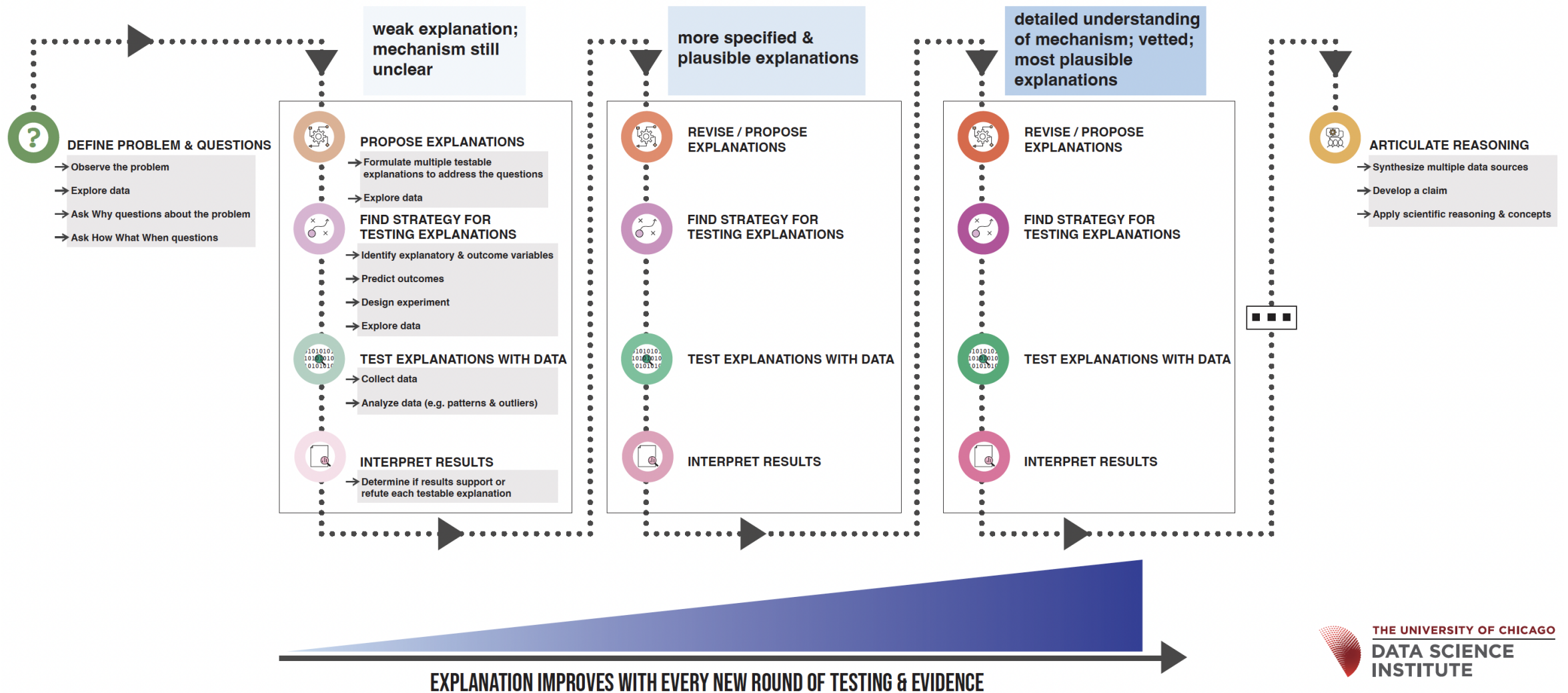
```
# Find p-value here.  
  
# Now let us get our p-value!  
# ... when doing data science in Python, it is common convention to use  
#.    "_" characters to mark variables whose values we don't need.  
  
from scipy.stats import chi2_contingency  
chi_square, p_value, _, _ = chi2_contingency(contingency_table)  
print(f"Our p-value: {p_value}")  
print(f"Our Chi-squared value: {chi_square}")
```

Our p-value: 1.1436488037757276e-110  
Our Chi-squared value: 499.6308374196881

	Population	Deaths	Deaths per 1000
Year			
1840	1842458	46281	25.119161
1841	1877963	45284	24.113361
1842	1916860	45272	23.617792
1843	1953787	48574	24.861461
1844	2033816	50423	24.792312
1845	2073298	48332	23.311651
1846	2113535	49089	23.226017
1847	2195401	60442	27.531189
1848	2238703	57628	25.741691
1849	2282858	68432	29.976459
1850	2327884	48579	20.868308
1851	2373799	55354	23.318739
1852	2420619	54213	22.396337
1853	2468362	61202	24.794580
1854	2517048	73697	29.279140

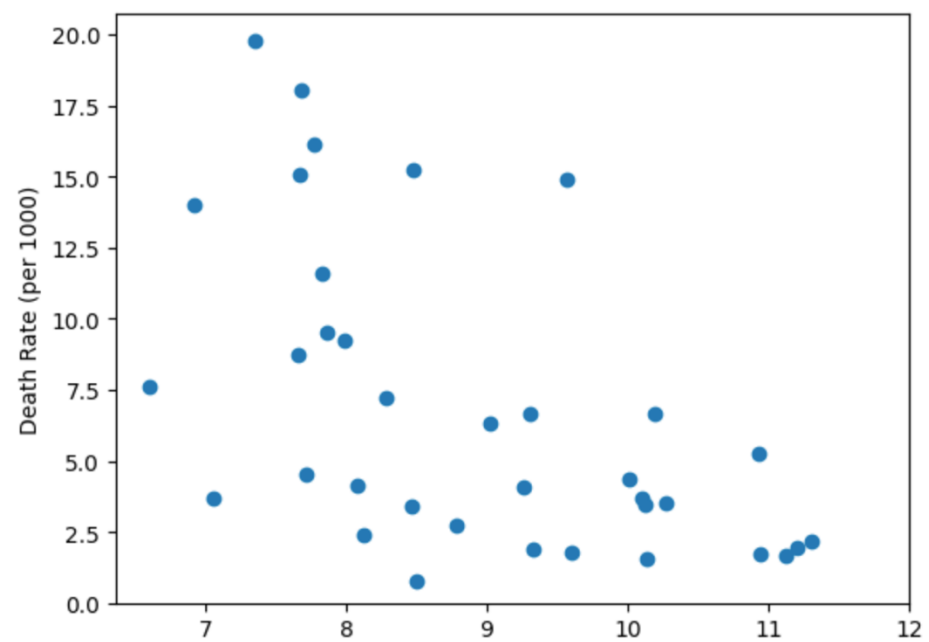
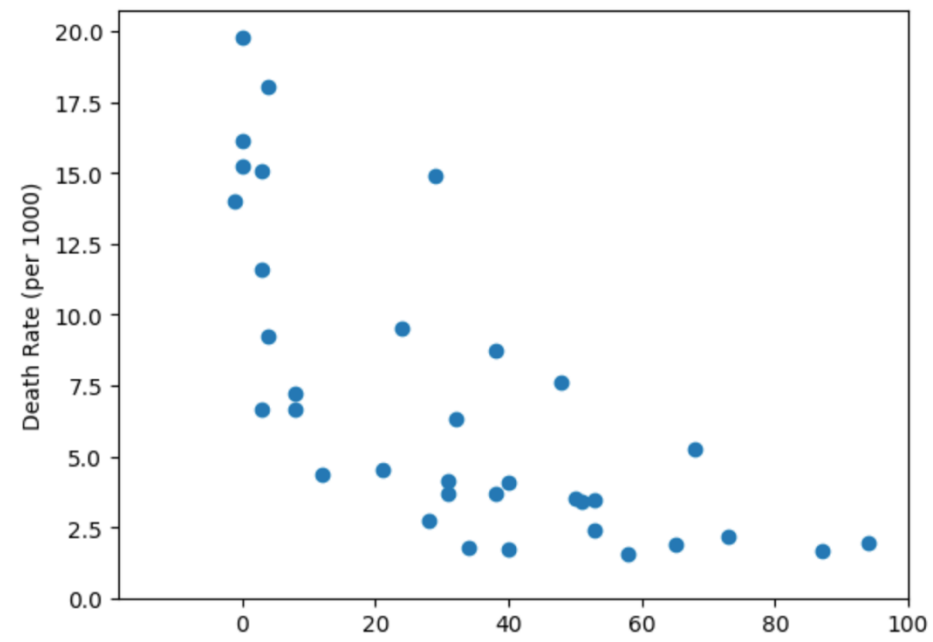
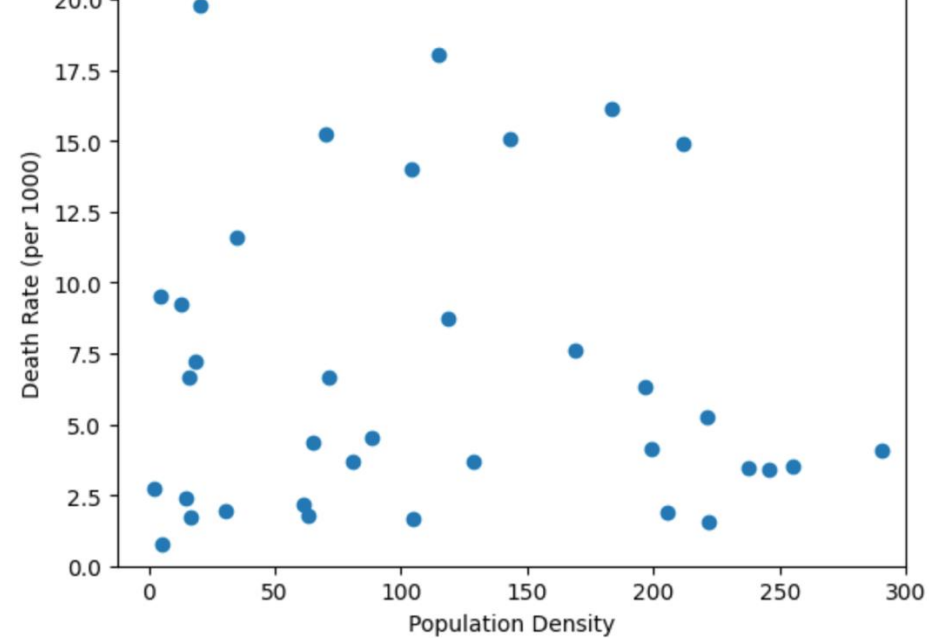
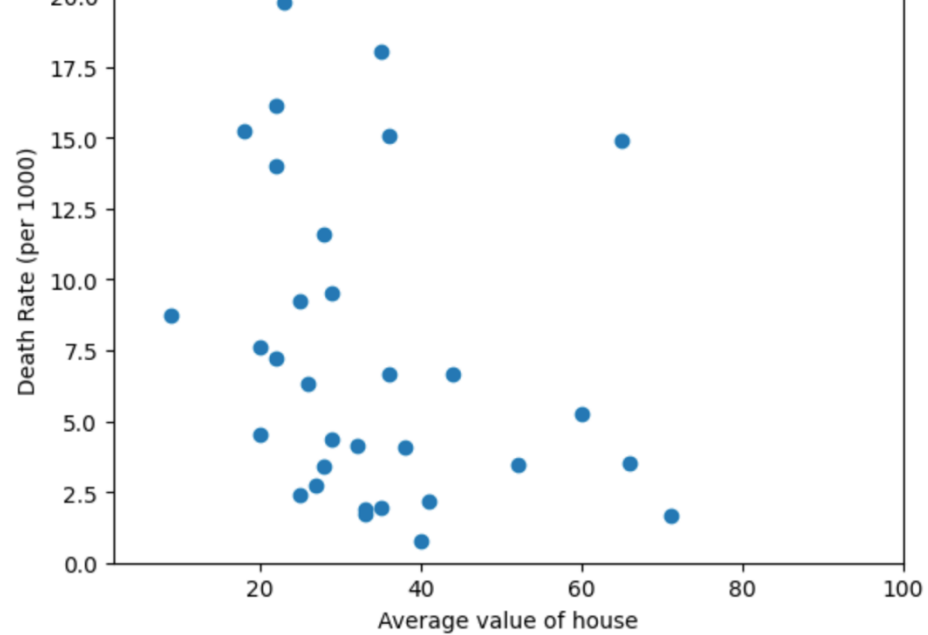
Death rate per 1000  
North: 1.7805598480785025  
South: 12.59968677572774  
East: 6.326962726552367  
West: 3.2989610482397667  
Central: 5.021616246078257

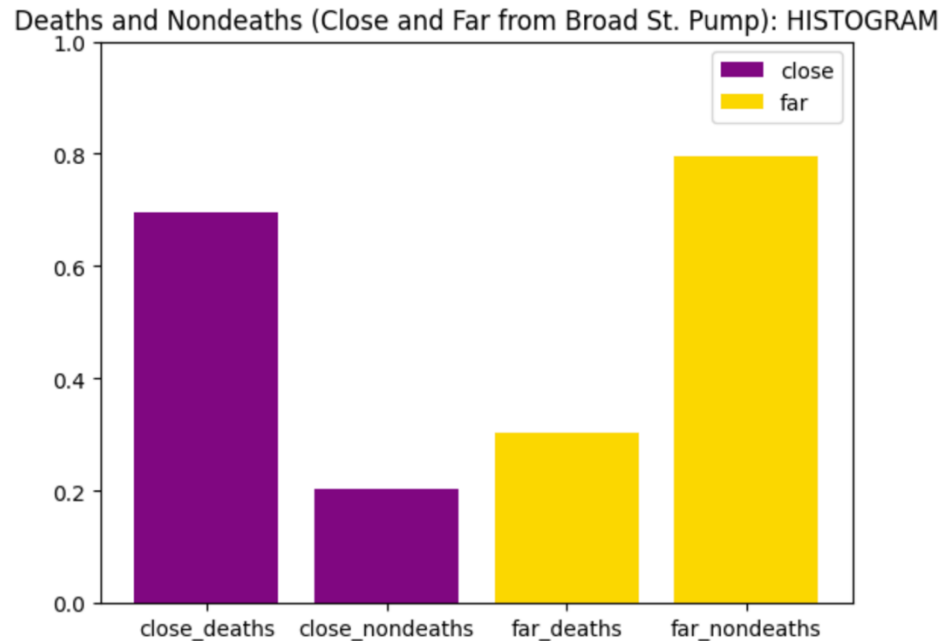
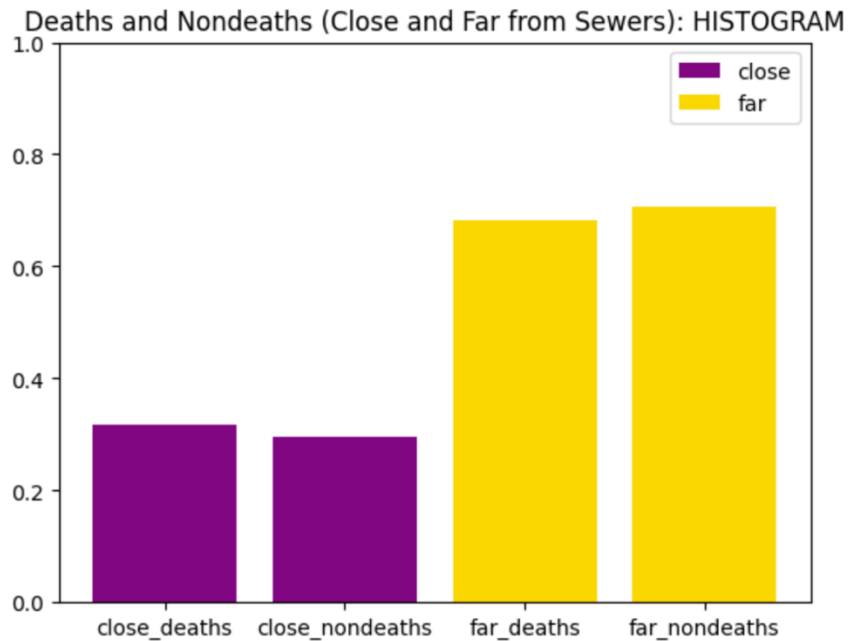
# THE DATA SCIENCE REASONING FRAMEWORK



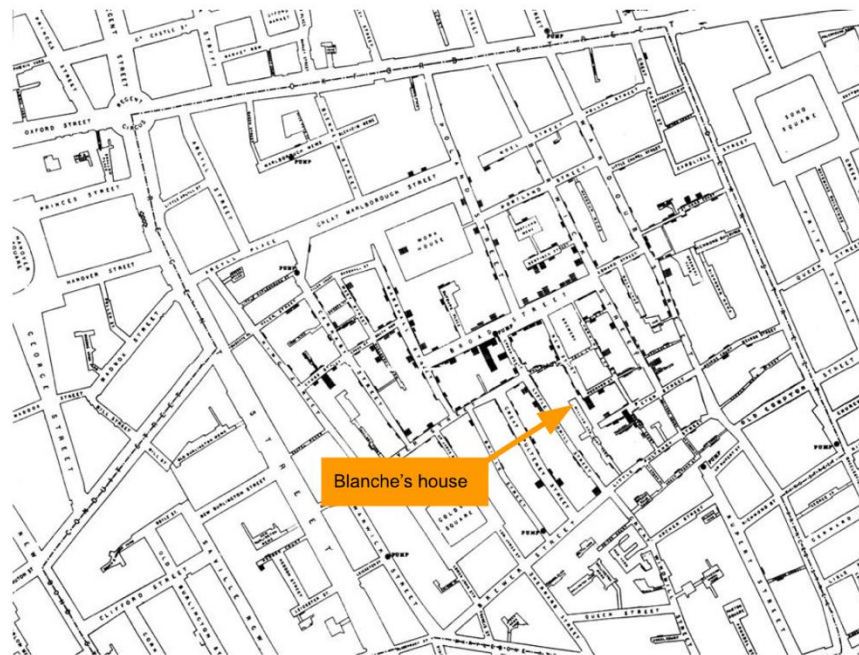
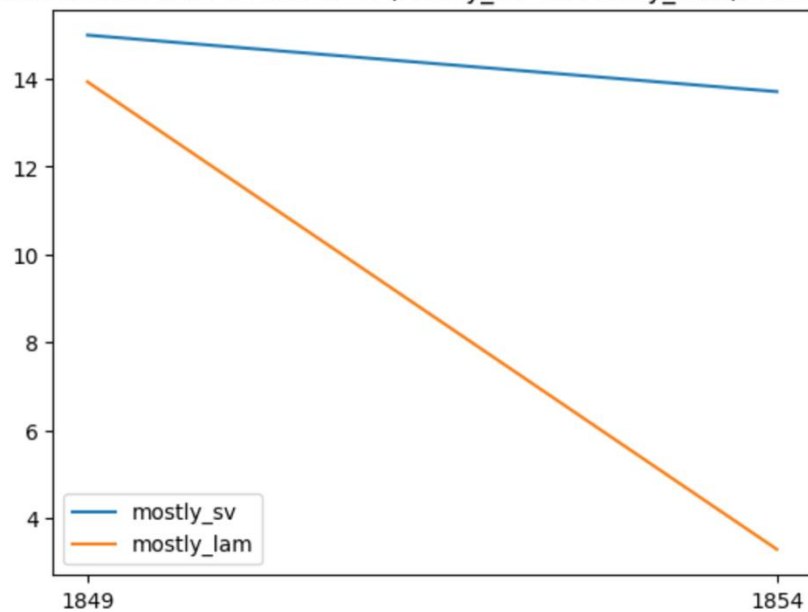


A COURT FOR KING CHOLERA.





Cholera deaths of 1849 and 1854 (Mostly\_SV vs. Mostly\_Lam): LINE GRAPH





At 7, Layton's Buildings, July 29, a tailor, aged 20,  
"cholera 17 hours" . *Southwark and Vauxhall.*

At 2, Dobb's Cross, July 30, the son of a shop-keeper,  
aged 10 yrs., "cholera Asiatic 24 hours". *Southwark & Vauxhall.*

At 81, Ann Street, July 29, the son of a labourer,  
aged 12 years, "cholera 8 hours". *Southwark and Vauxhall.*

At 28, Wickham Pl., Aug. 2, son of a brush-mkr., aged  
2½ yrs., "choleraic diarrhoea 24 hours." *Southwark & Vauxhall.*

At 2, Russell Place, Aug. 2, the widow of a labourer,

