

Causes of death in Mourne 1878-1921

By Dermot Balson, February 2019



I have transcribed and analysed all deaths registered in Mourne, county Down, between 1878 and 1921 (the period for which scanned records are currently available), and this document summarises what I found.

All opinions are mine, along with any errors.

While I am a retired actuary, so I am comfortable in working with statistics, my knowledge of medicine is minimal, so I have done my best to categorise causes of death, but there are bound to be some errors.

Demographics of Mourne

Mourne sits close to the border, and its population is roughly half Catholic and Protestant. After the great famine, the population stabilized as about 11,000, and remained at this level throughout the period

Nestling within the Mourne mountains, Mourne is relatively isolated, and it has changed relatively little over the past 150 years. The main occupations are still farming and fishing, and there has been little industrialization. About 10% of the people lived in the town of Killeel, traders, artisans and townsfolk.

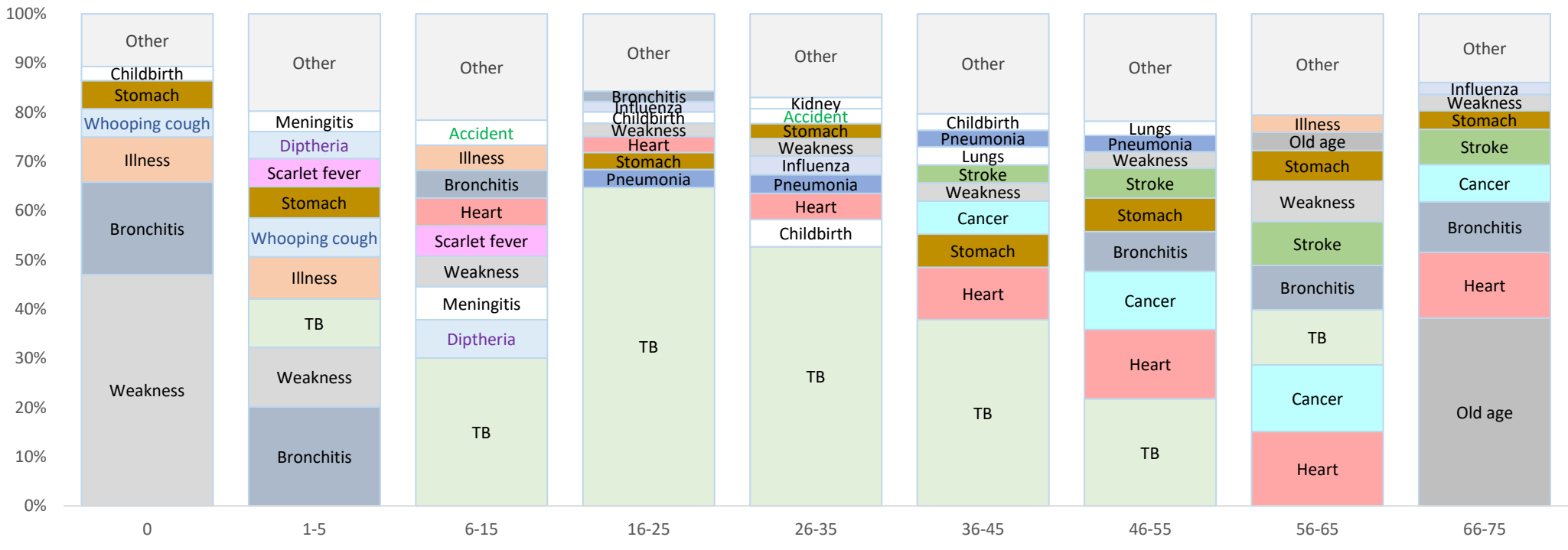
I believe this well balanced and steady demographic profile makes Mourne a very good candidate for examining causes of death in the late 19th century.

Contents

Demographics of Mourne	1
Summary of causes of death.....	3
Individual causes of death	4
Accidents.....	4
Apoplexy	5
Bronchitis	5
Childbirth.....	6
Diphtheria	6
Measles	7
Meningitis	7
TB	8
Typhoid	8
Whooping cough.....	9
Tuberculosis (aka TB, consumption)	10
Spanish Flu (1918-19).....	12
How the flu spread.....	13
Total deaths by month and year in Mourne	14
Death rates.....	16
Projected population	17

Summary of causes of death

Main Causes of death in Mourne 1878-1921 by age group



The causes shown above should be fairly self explanatory, but I have a few comments.

The causes of death were as clear as I could expect, given that in many cases, a doctor did not attend. Many deaths of children were attributed to symptoms like diarrhea or fever, and some were ascribed (probably incorrectly) to teething. Easily recognizable illnesses like scarlet fever were probably reported more accurately.

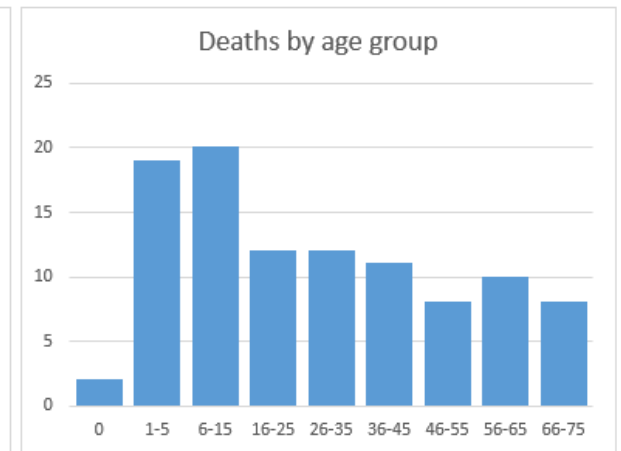
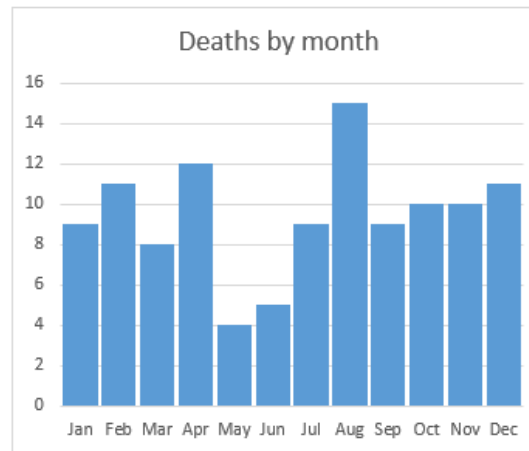
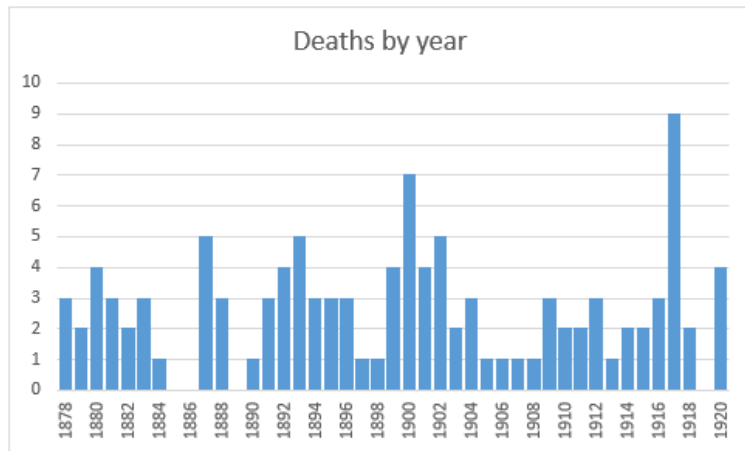
For the aged, most deaths were simply recorded as old age, so little analysis is possible.

Individual causes of death

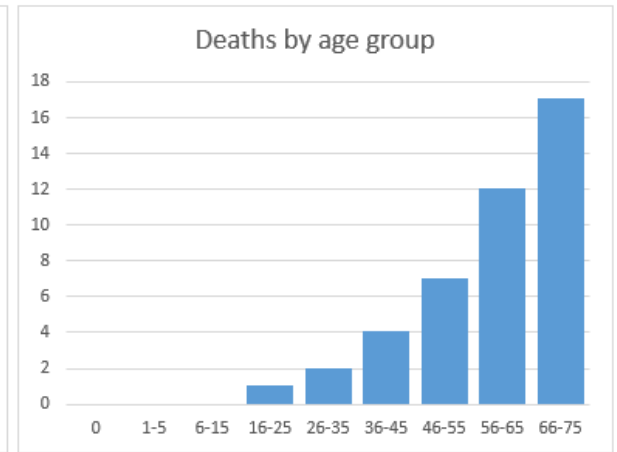
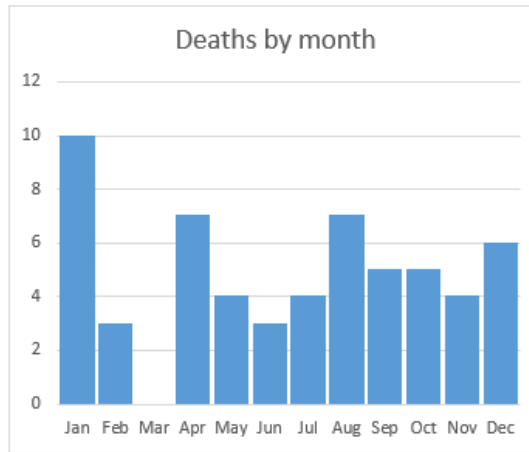
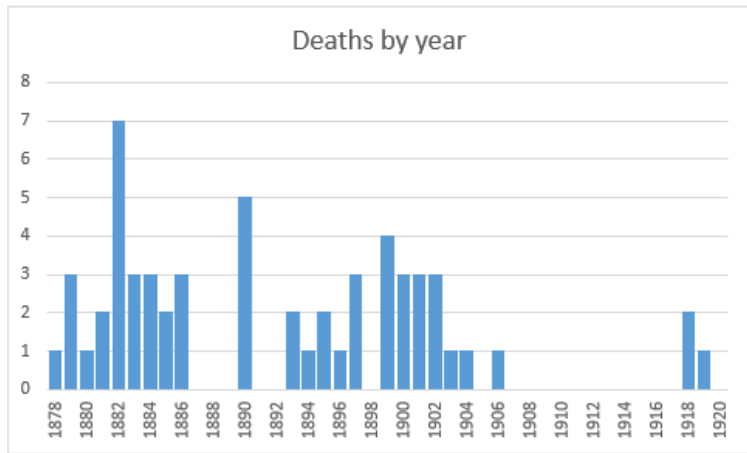
Age	Scarlet		Whooping						
	fever	Paralysis	Gastritis	Meningitis	Bronchitis	Pneumonia	cough	Typhus	Influenza
0	4		14	7	126	1	38	1	4
1-5	27	1	9	19	94	15	38		5
6-15	23	2	3	25	22	7	8	7	3
16-25	4		4	10	12	20		7	9
26-35	2	2		6	4	15		5	13
36-45		6	6	2	8	12		1	7
46-55		16	9	1	39	16		3	6
56-65		39	14	1	70	22		5	7
56-120		99	18		238	36		9	8

The charts below show the figures for selected causes of death.

Accidents

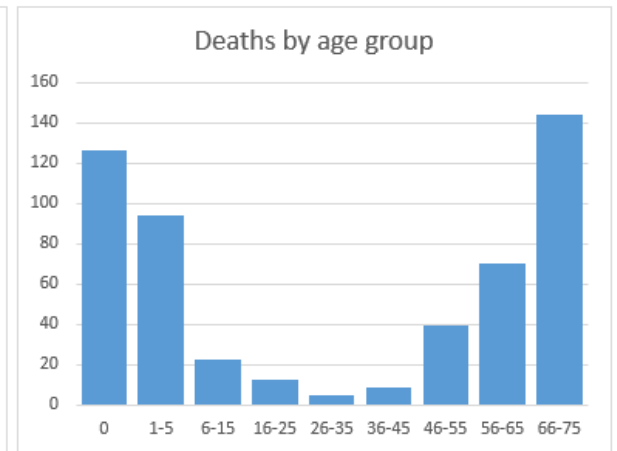
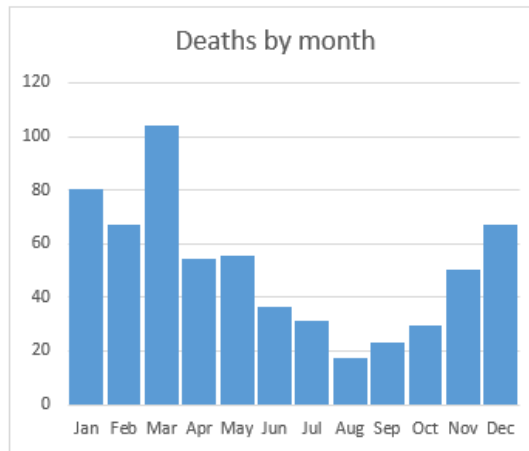
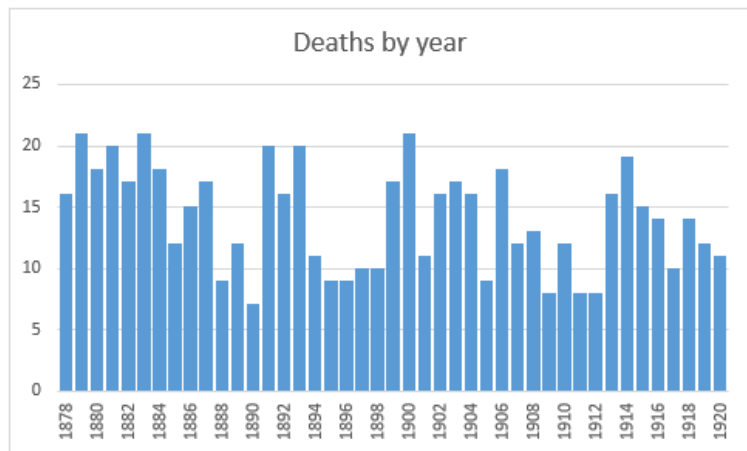


Apoplexy

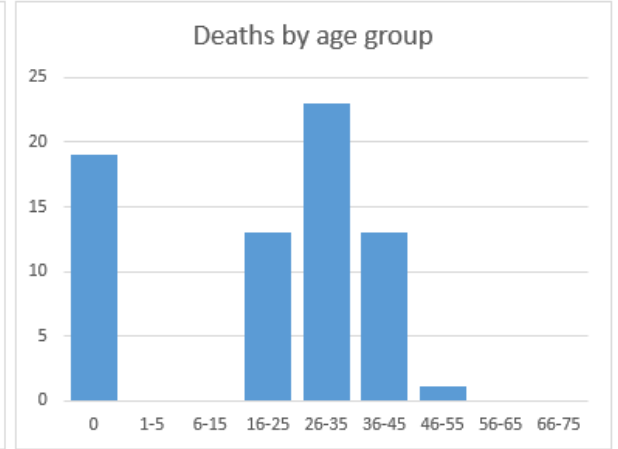
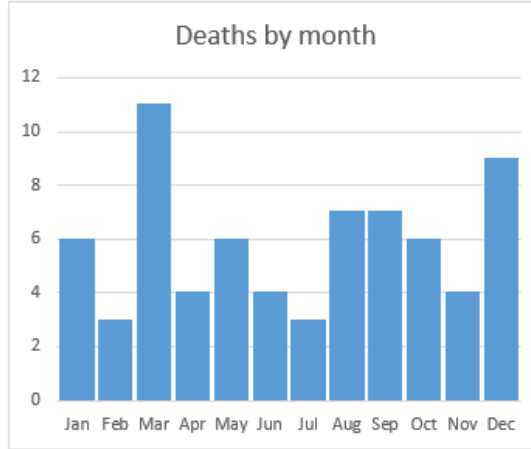
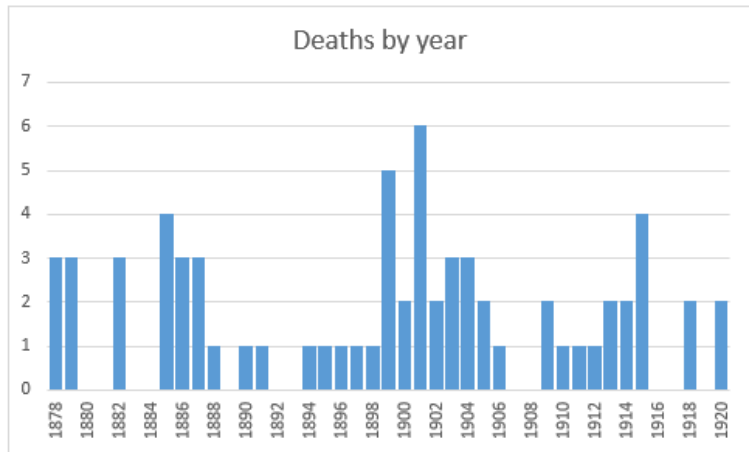


This was recorded far less after 1900, perhaps because diagnoses became more accurate, and the underlying cause was recognized as something else.

Bronchitis

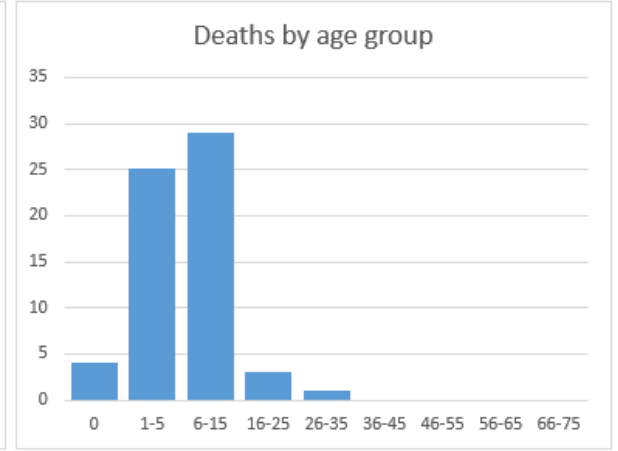
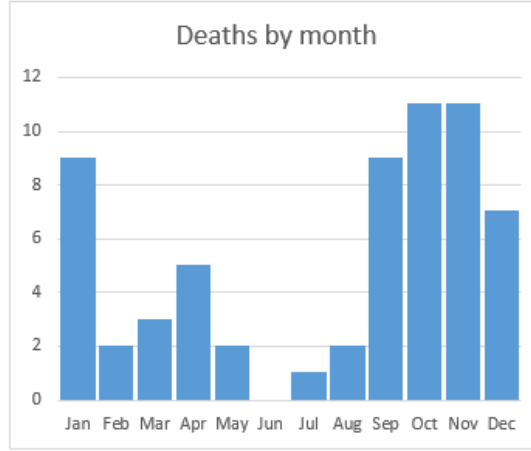
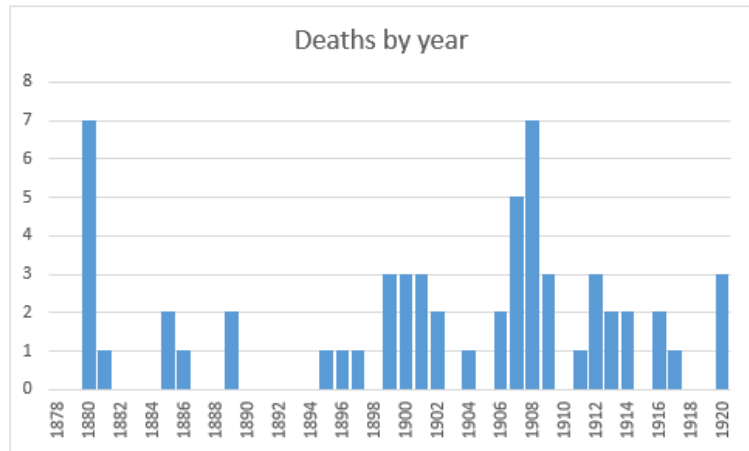


Childbirth

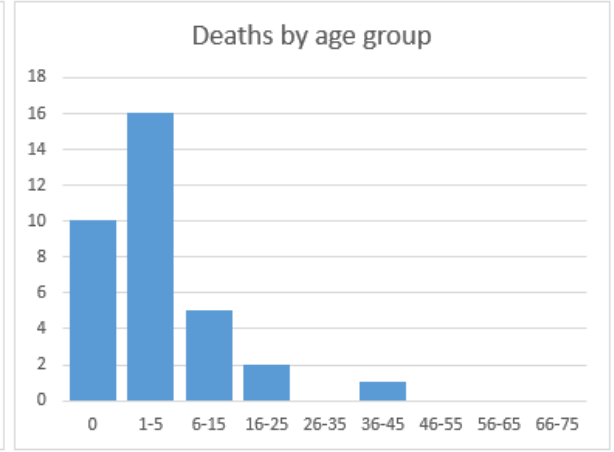
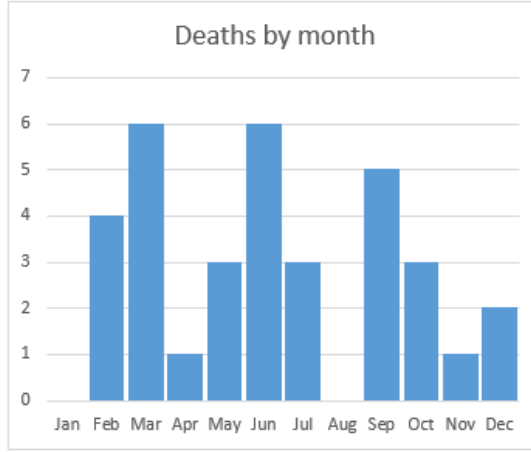
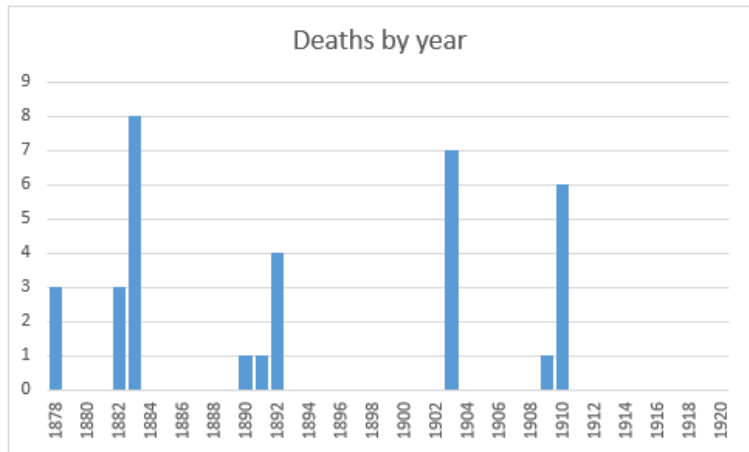


This includes both babies and mothers. The average death rate for mothers was about 1 in 350 births.

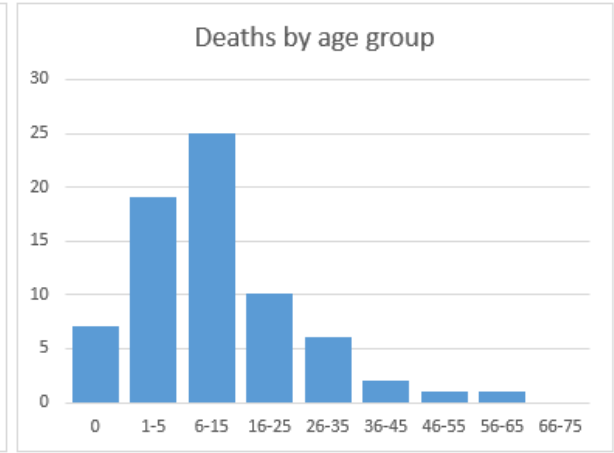
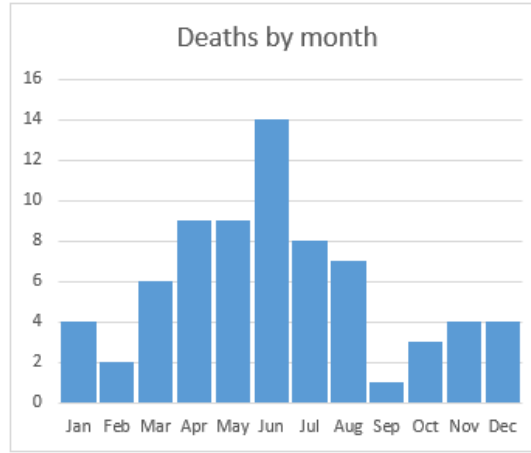
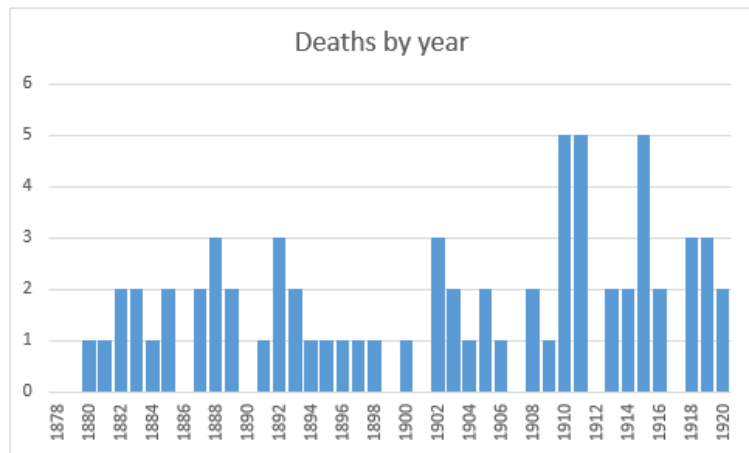
Diphtheria



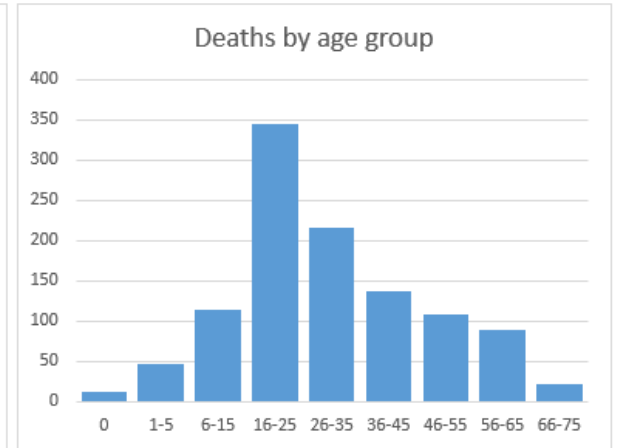
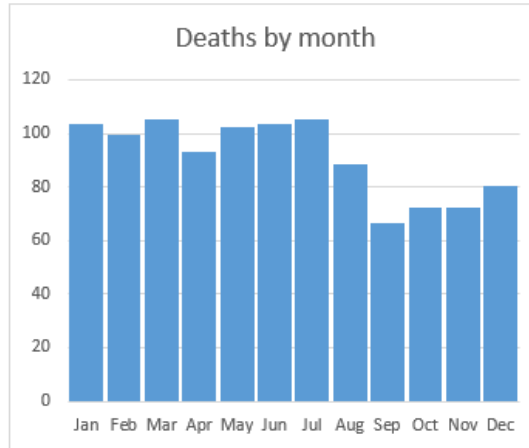
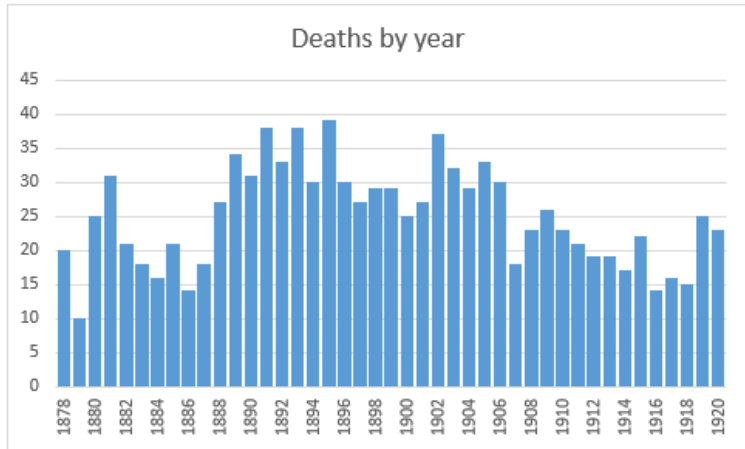
Measles



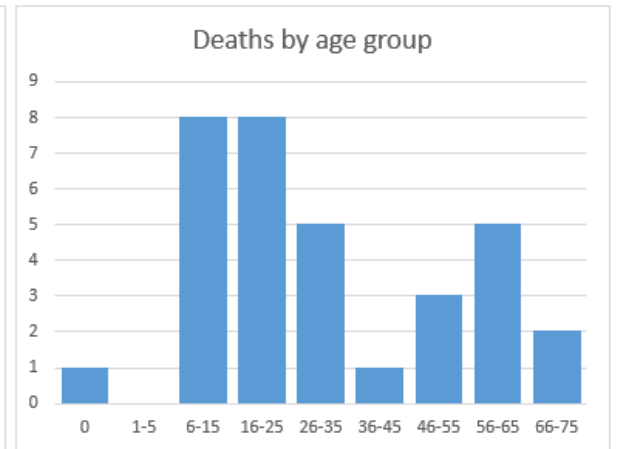
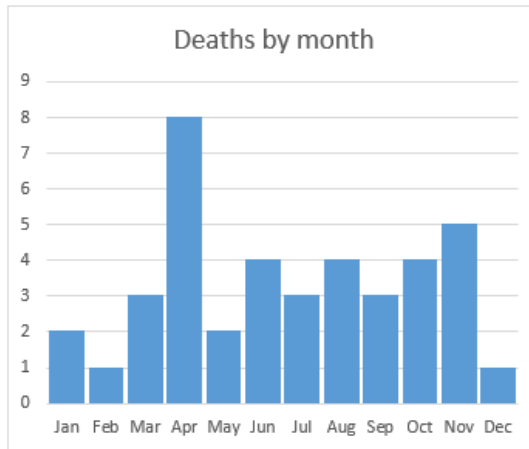
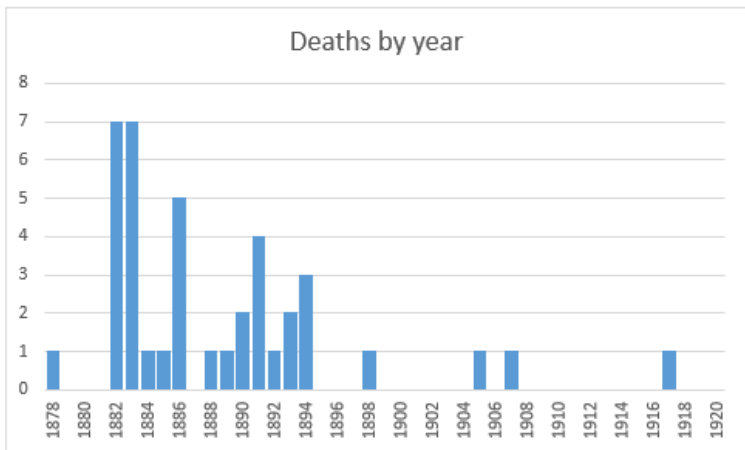
Meningitis



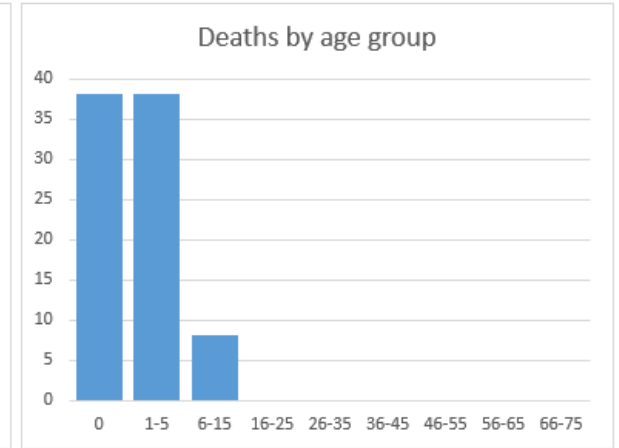
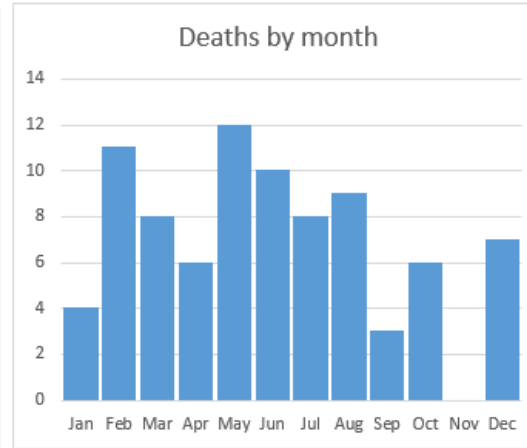
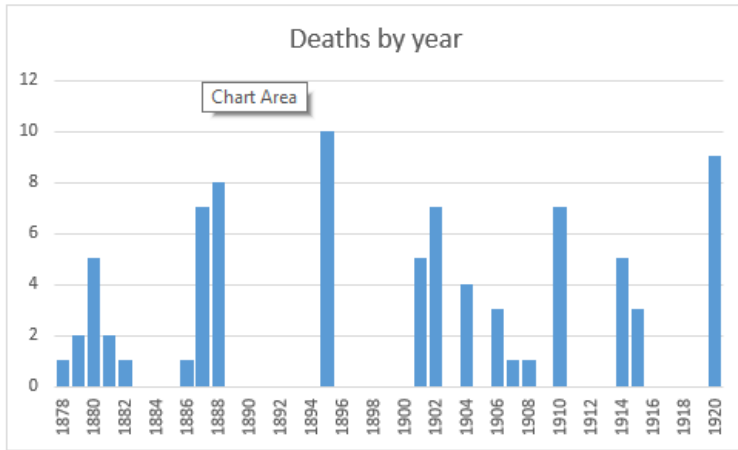
TB



Typhoid



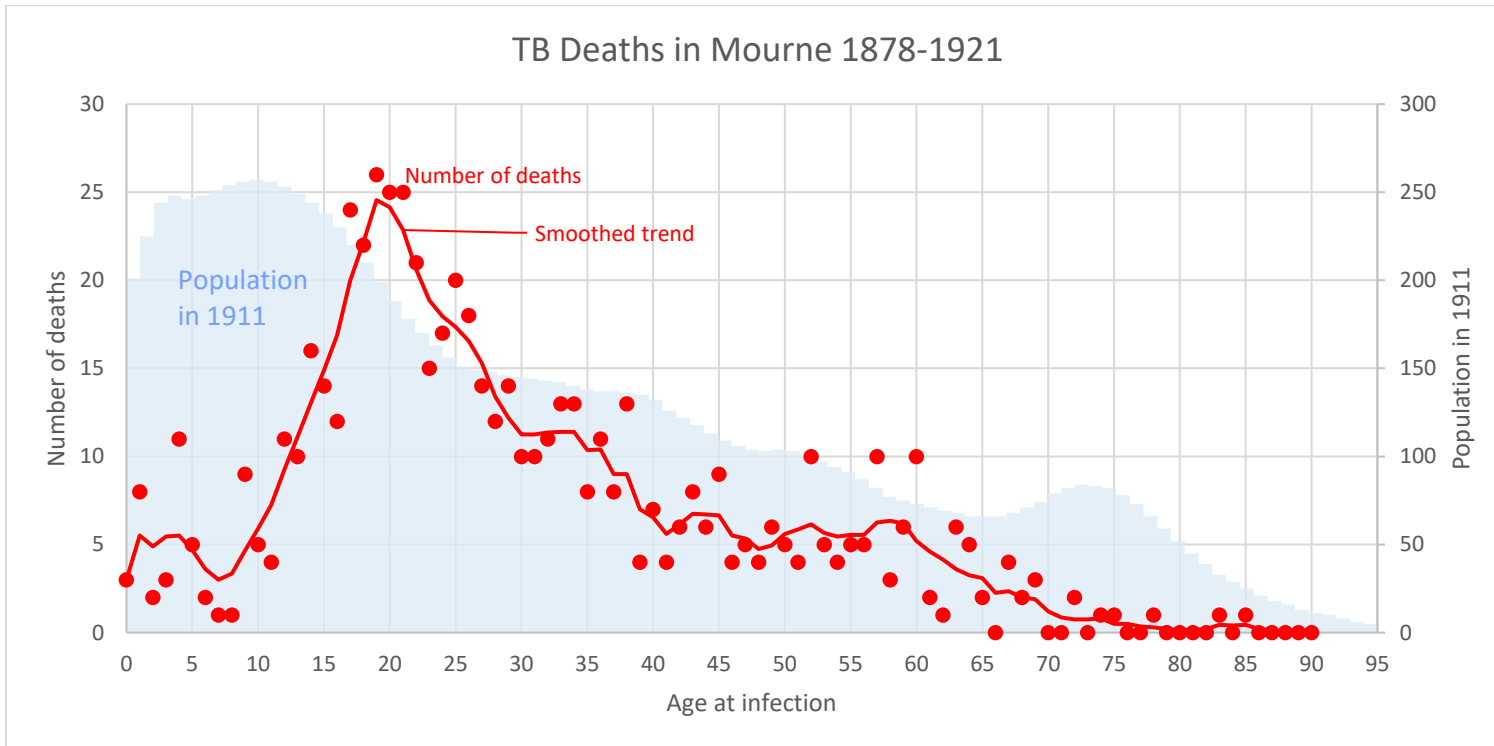
Whooping cough



Tuberculosis (aka TB, consumption)

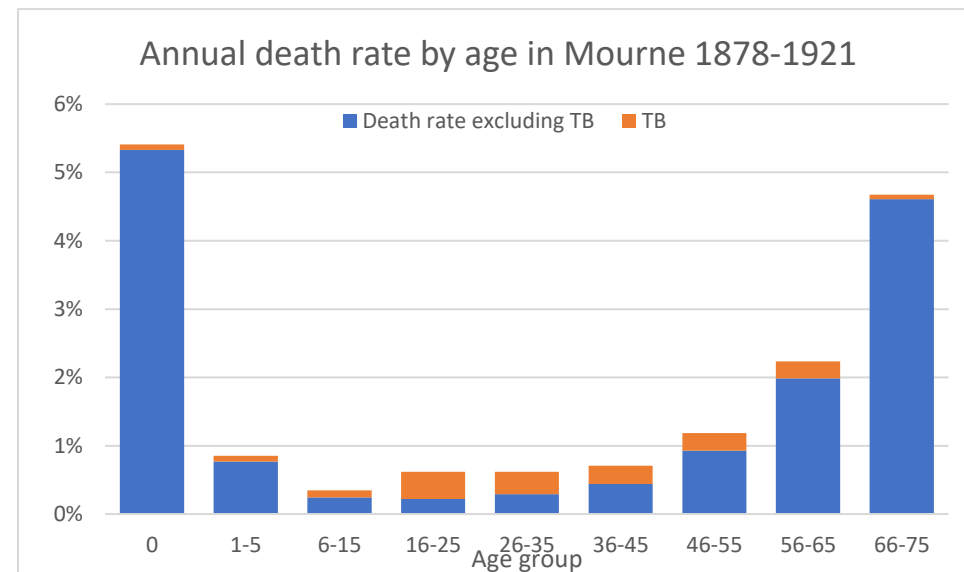
TB was the scourge of young adults, as can be seen from the chart above. It was responsible for over the half the deaths of people aged 16-35.

The chart below highlights this, showing the number of deaths at each age, with the size of the population shown in the background.

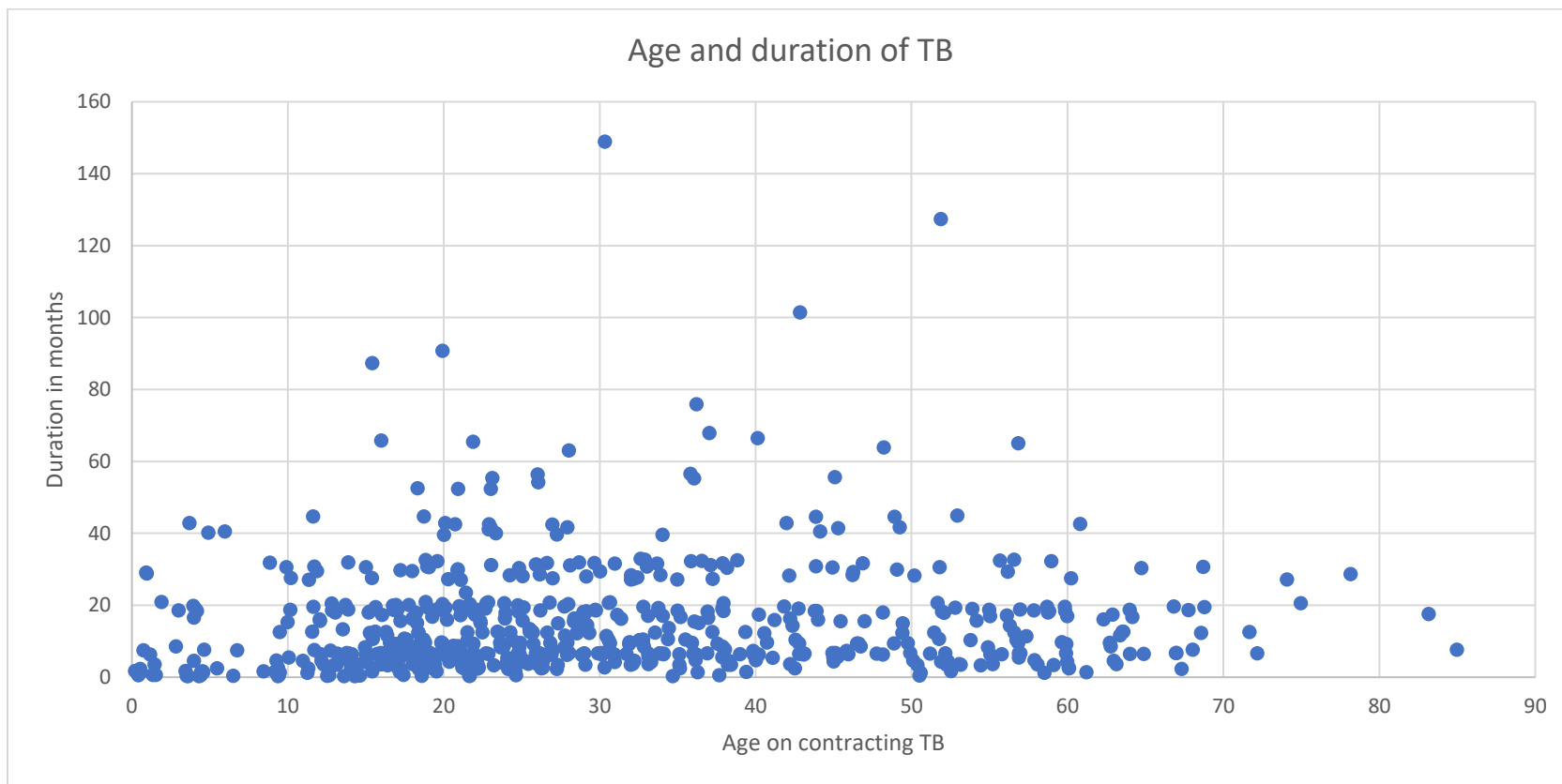


(Note: the population figures have been smoothed to correct the clustering at 10 year intervals)

The chart on the right highlights the impact of TB on young adults.

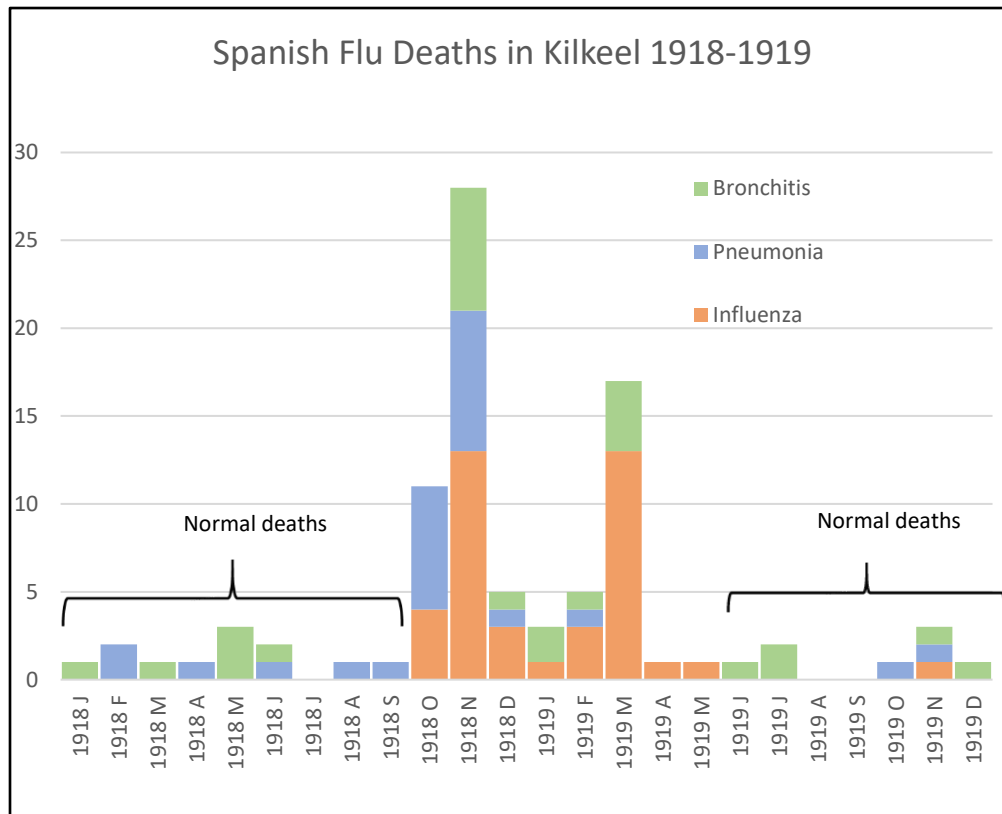


The death records also showed the duration of TB in most cases. While this is not necessarily accurate (I have an ancestral relative who suffered for 5 years but is only shown as having TB for one year), it gives some idea of duration.



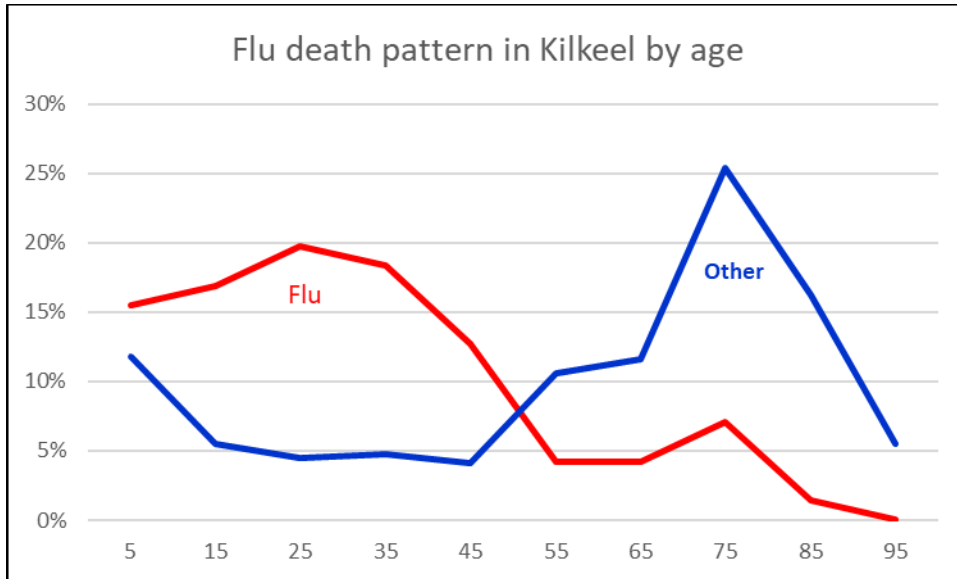
Spanish Flu (1918-19)

The chart below shows the number of deaths from three main causes attributable to the flu, for 1918 and 1919. It has two “spikes”, in November 1918 and March 1919, which tie in with two of the known “waves” of infection (Kilkeel missed the first one, earlier in 1981). November was the worst, worldwide.



The flu was selective, mainly affecting younger people, as seen below, which is very unusual.

This may be because older people had been immunized by exposure to a similar virus decades earlier.



How the flu spread

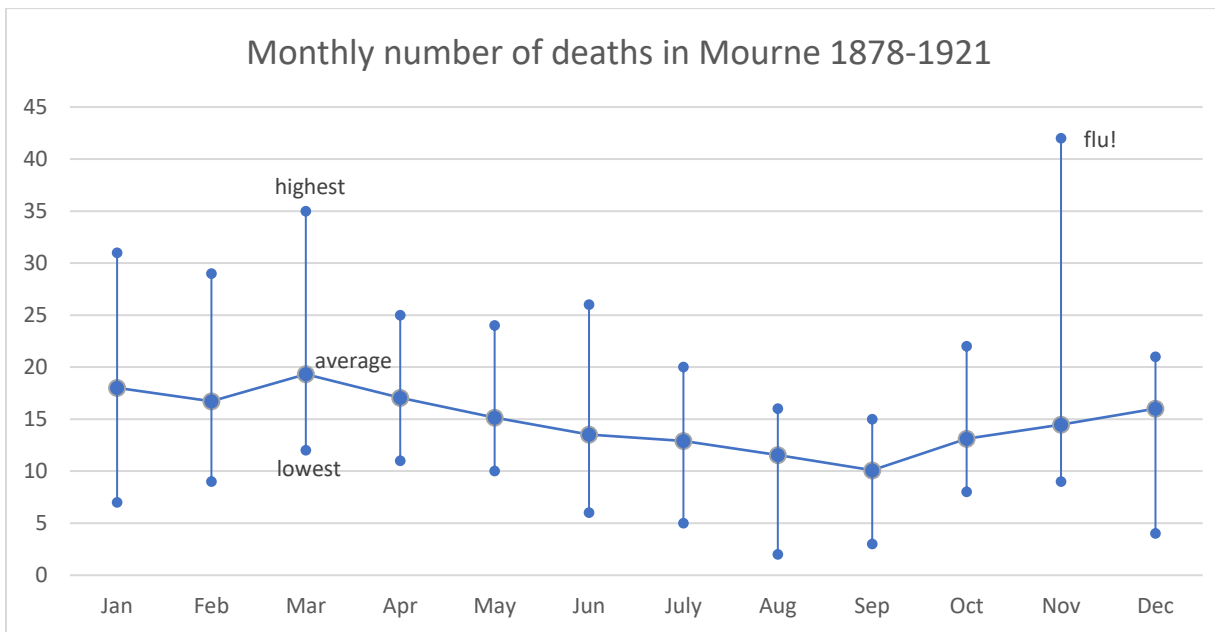
The deaths started in the town of Kilkeel (which has 10% of the total population) and then followed in Annalong. It seems likely that the flu came in through the ports. Most deaths occurred in these two towns, but there were scattered deaths in other townlands.

In other countries, the flu was caught by about 1/3 of the population, with around 1 in 40 dying. This means the death rate was 0.5-1.0% of the population. This is in line with Mourne's 71 deaths out of a population of 11,000.

Total deaths by month and year in Mourne

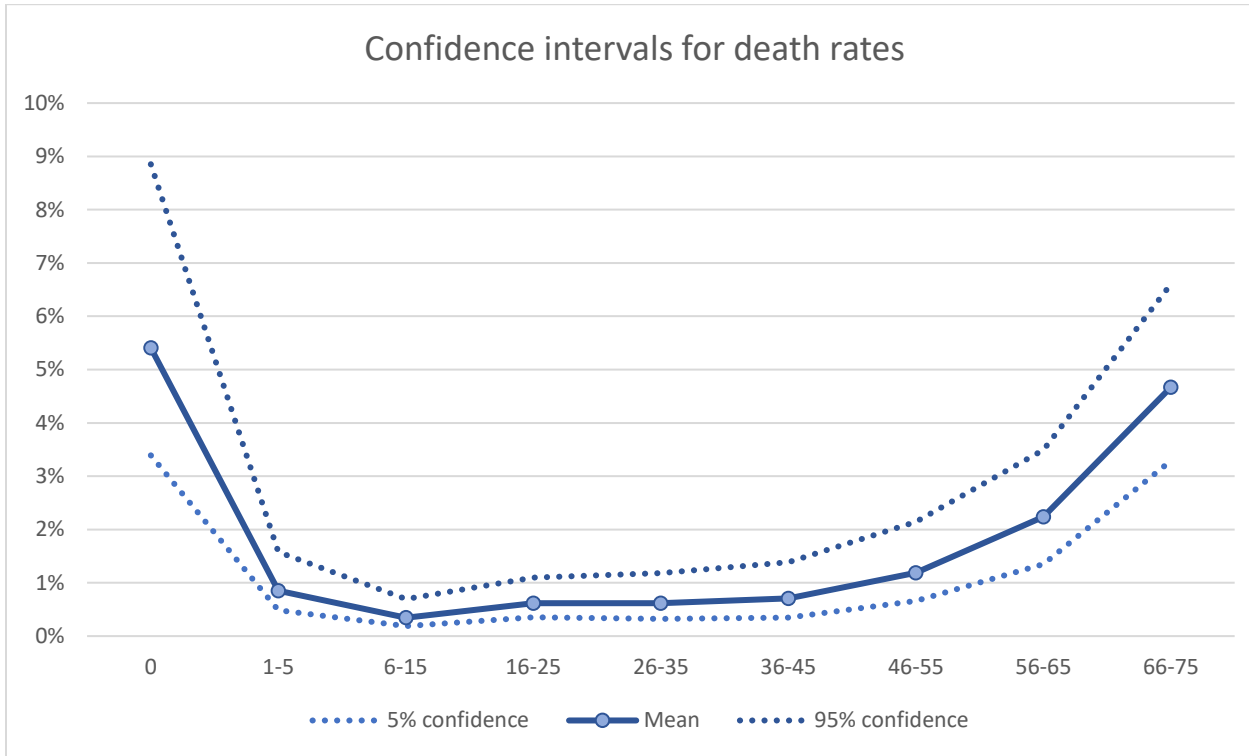
Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1878	16	17	11	18	11	12	11	11	11	21	15	26
1879	24	19	14	19	17	13	12	14	12	15	6	25
1880	14	19	14	17	25	16	19	19	10	20	14	23
1881	19	16	16	12	19	20	14	11	13	9	16	25
1882	19	15	24	26	16	17	13	15	12	16	22	23
1883	19	21	22	22	17	10	17	10	9	19	18	17
1884	19	13	13	11	13	11	17	9	11	17	12	16
1885	12	15	13	20	12	16	14	17	14	8	7	9
1886	20	15	23	13	13	9	14	9	12	12	13	13
1887	16	11	20	15	10	16	14	12	12	16	18	19
1888	17	24	18	15	15	15	18	14	13	14	8	12
1889	15	18	20	20	16	12	21	16	10	11	8	21
1890	19	19	11	20	21	22	11	10	12	4	12	9
1891	20	19	19	14	19	13	12	12	10	12	6	16
1892	19	14	31	13	7	11	8	12	15	11	14	15
1893	21	18	22	14	10	12	12	16	4	11	22	19
1894	29	15	16	13	10	11	12	4	12	11	17	17
1895	13	21	15	26	19	21	18	16	5	10	8	14
1896	20	12	17	13	15	5	14	12	6	8	12	13
1897	18	17	13	13	8	8	10	6	14	11	16	13
1898	13	16	31	20	10	12	13	9	10	10	15	18
1899	22	21	21	25	16	14	13	14	8	21	21	25
1900	29	24	22	20	26	11	17	17	14	11	14	15
1901	16	12	22	16	21	18	15	11	13	21	21	22
1902	20	23	24	15	13	14	15	15	10	17	13	15
1903	21	18	19	25	18	14	17	2	12	9	11	19
1904	11	29	20	21	21	26	8	16	9	12	10	14
1905	17	17	17	19	14	17	8	15	9	16	13	12
1906	20	18	21	14	24	14	20	12	10	8	9	13
1907	18	21	17	17	12	11	5	11	3	15	17	14

Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1908	31	11	17	13	13	19	11	12	12	9	20	19
1909	13	13	26	22	18	6	8	11	7	10	15	15
1910	15	18	14	24	15	17	18	10	12	15	15	13
1911	11	13	12	19	13	17	11	12	12	22	10	17
1912	16	16	24	13	10	11	8	14	14	11	20	14
1913	24	18	17	14	10	7	13	8	5	16	15	11
1914	17	15	32	13	14	11	15	11	15	10	13	15
1915	23	9	35	11	16	14	13	9	11	10	15	14
1916	14	17	17	20	12	15	8	11	11	14	18	21
1917	17	10	16	16	13	12	13	6	8	12	9	4
1918	13	13	14	11	16	12	6	7	9	17	42	21
1919	19	20	28	18	16	12	13	4	7	8	13	18
1920	16	15	14	18	19	14	9	16	12	15	11	11
1921	7	10	18	12	14	7	10	10	3	12	13	6



Death rates

Below are the approximate death rates for different age groups, averaged over 1878-1921, with binomial confidence intervals (2 standard deviations)



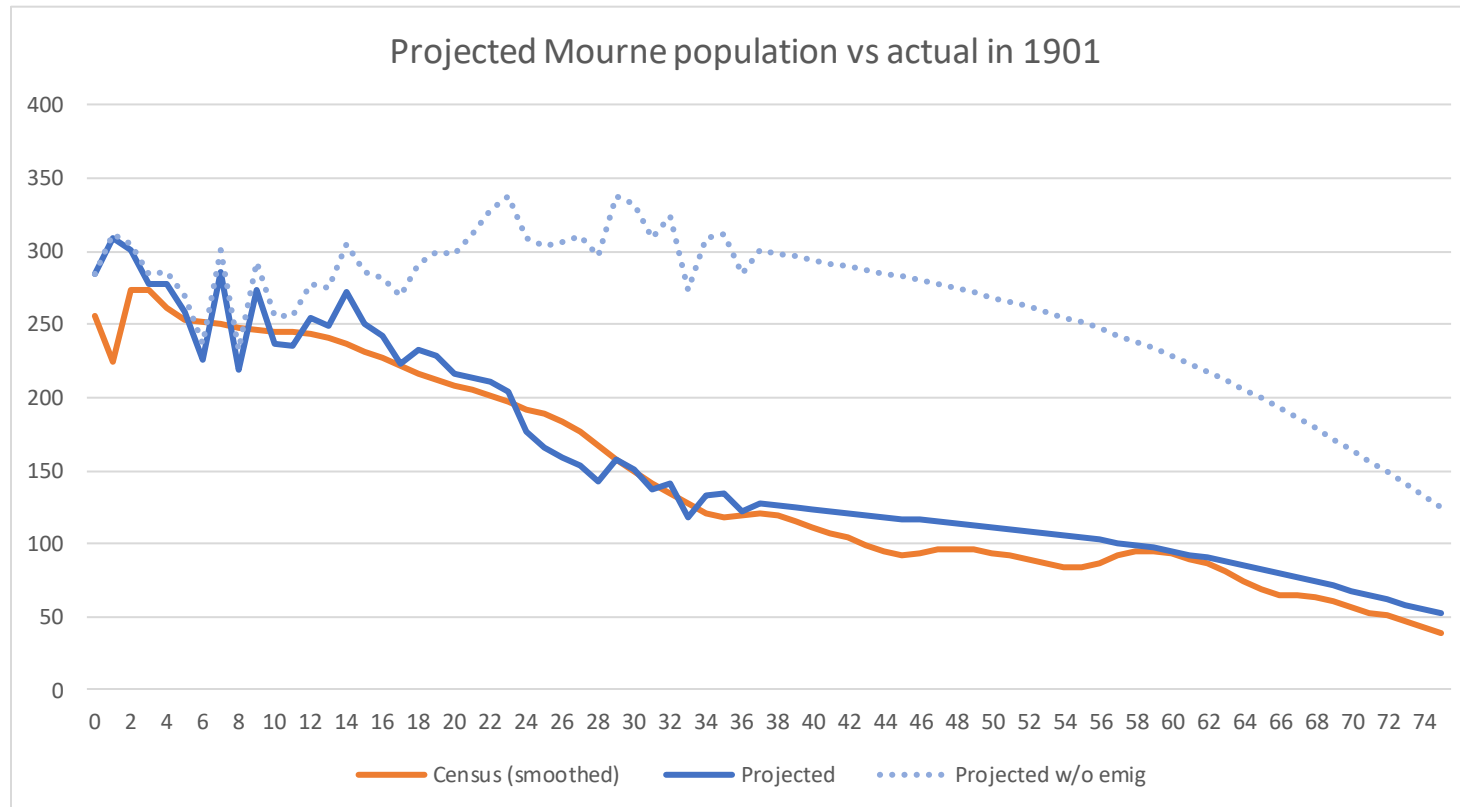
Projected population

The chart below is mainly intended to show the effect of emigration.

To do this, it needs to project the population, which it does using known birth numbers (for years before 1864, an average of 400 births pa has been assumed) and the mortality rates above. This gives the dotted line in the two charts below.

The orange line shows the census figures, smoothed because there are huge peaks every 10 years due to rounding.

Emigration rates have been chosen to get the dotted line to fit the orange line. This is inevitably a broad guess, since there is no data, and there will inevitably be some overfitting to make the graph work. For that reason, I have created a graph for both 1901 and 1911, and used the same emigration assumptions. The results show it is possible to get close to the actual population figures in both cases – but of course, my assumptions are complete speculation. Nevertheless, it is interesting to see the possible effect if emigration had not occurred.



Projected Mourne population vs actual in 1911

