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Limerick City and the Spanish Influenza Epidemic, 1918-19

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Abstract

The Spanish Influenza pandemic of 1918–1919 has remained prominent in international popular memory, particularly in the Americas. However, although affected by this brutal disease, there is very little public memory of it in Ireland. Possibly due to the timeframe in which it occurred, many historians focus instead on the political upheaval that the country experienced. Thousands of people lost their lives in Ireland during the eighteen months that the virus reigned and sadly, many are now forgotten. This study examined the effects of the disease on Limerick City in particular. Limerick tends to be overlooked in terms of social research (apart from criminal aspects). Using the burial ground records of the primary cemetery in Limerick, it was possible to analyze the effects of the epidemic in considerable detail. The burial ground registers coupled with previous studies, contemporary accounts and official reports create a picture of Limerick at the time as well as the overall reactions to the epidemic. Previously unreported findings were that almost a quarter of the population were infected, the mortality rate was much higher than the national average, infants aged 1 to 5 were the most seriously affected, and there is a link to overcrowded and poor living conditions.

Keywords: Spanish influenza; Limerick City; cemetery records

Introduction

The ‘Great ‘Flu’ of 1918/19 was a true pandemic that affected most parts of the World. Estimates of how many people died worldwide as a result of the pandemic range from 20 million to more than 100 million in eighteen months (Milne, 2006). Historian Alfred W. Crosby (2003: 215) said that the influenza pandemic of 1918-19 ‘killed more humans than any other disease in a period of similar duration in the history of the world.’

The name ‘Spanish Influenza’ came about not because it originated in Spain but because Spain was the first country to report, uncensored and unbiased, on the spread of the disease, due to its neutrality in World War I. It occurred in three waves; the first in spring 1918, the second in October/ November 1918 and the third in spring 1919 (Oldstone, 1998). The beginning of the pandemic in spring 1918 is thought to result from soldiers returning to their home countries. The demobilisation of troops in November 1918 (Armistice Day) could possibly account for the second wave of influenza which proved to be more deadly than its predecessor (Oxford, 2001).

Many countries closed dance halls, theatres, schools and churches, and in Chicago, the police were instructed to arrest anybody who sneezed in public (Ghendon, 1994). Oldstone (1998) writes that as the epidemic in America gathered speed, school children even came up with a rhyme about it to skip by:

I had a little bird and its name was Enza,
I opened the window and in-flew-Enza.

In Ireland, the first verifiable outbreak of the first wave can be traced to Cobh, when a US Naval ship, the USS *Dixie*, docked there in May 1918. It seems that the first wave was somewhat more contained than the subsequent waves as it did not affect the entire country (Beiner *et al*, 2009).

Confirmation of the onset of the second wave came from Howth during late September and this time all areas of the country were infected. By Christmas all counties had suffered an outbreak in both rural and urban areas (Foley, 2010). At this time, according to Clear (2007), Glasnevin Cemetery in Dublin had 240 burials in eight days, the norm being 12 or 13. The third wave (mid-February to mid-April

1919) seems to have struck mainly along the West coast, especially Mayo and Donegal, and Dublin (Beiner *et al*, 2009).

As suddenly as it had begun, the influenza epidemic ceased. The short timeframe gave little scope for effective central government action. Foley (2010) writes that the Local Board of Governors' most visible response to the epidemic was to make 'acute influenzal pneumonia' a notifiable disease in the spring of 1919, by which time of course the third wave was almost at an end.

Many public buildings were closed during the 'Great Flu' to limit infection. Schools and libraries were closed, court sittings were postponed and many businesses closed due to staff illness. Streets were washed with disinfectant in an attempt to reduce the spread. People in Dublin were nervous of boarding the city Tram in case of infection. The fear of the disease was intensified by stories of the discolouration and accelerated rate of decomposition of those who had died¹, which earned the epidemic the moniker 'the Black 'Flu' (Clear, 2007).

The Influenza pandemic has been studied at length in the bigger countries such as America and the United Kingdom but not in any great detail in the Irish context. As Ferriter (2005, p. 185) puts it 'distracted by the enormity of the political change, and impending intensification of revolution, Irish historians have done little to assess its impact, and an analysis of it is long overdue'. This study looks at Limerick City, and aims to establish both the actual impact and any special characteristics that have not been reported from elsewhere.

Methodology

The complete burial records of Mount Saint Lawrence cemetery are available, and provide a uniquely useful database, because no other public cemetery in the city was open for new burials in the period. The *Annual Reports of the Registrar General for Ireland* provide the numbers of people who died, but these have insufficient detail. The burial record meticulously records not just the name, date and burial plot, but also the gender, age and place of death.

¹ Caused by cyanosis, a lack of oxygen in the blood and tissue

Statistical comparison allows us to estimate for the first time the number who succumbed to the virus. It is also necessary to gain an understanding of life in Limerick at the time to give context to the situation. Contemporary published material is an invaluable source for contextual information, and allows tentative conclusions on the effect of environmental factors.

Contemporary accounts

The best picture of influenza in Limerick can be gained from contemporary documents, articles and reports. The main sources of contemporary comment and reaction to the arrival of the virus in the city are the newspapers, namely *The Limerick Leader*, *The Limerick Chronicle* and to a lesser degree *The Irish Times*. These included reports of the meetings of the Poor Law Board of Guardians as well as features, advertisements, and comments.

Commentary varied from misplaced optimism - ‘Enquiries made yesterday point to the view that the influenza epidemic has practically spent itself in the city’ (*Limerick Chronicle*, 7th November 1918) to fatalism:

[I]t communicated itself to this country, attacking all classes of people without exception, old and young, rich and poor, going down without distinction. In previous epidemics a single class of people was sometimes attacked, but in the present virulent outbreak, sickness, and frequently death, exacts its toll alike from the dweller in the open, well ventilated country mansion and the denizen of the city slum, where free air and sunshine seldom penetrate. (*Limerick Leader*, 30th October 1918)

Naturally, advice was plentiful, from common-sense observation - ‘It has not affected the well-to-do nursery very much; nor has it spread so badly in those households which allow of separate bedrooms for their members’ (*Limerick Leader*, 14th February 1919k) – to less well-founded ‘cures’: ‘The germs of influenza are said not to be able to live in quinine but too much of that makes a person deaf’ (*Limerick Leader*, 15th July 1918c). Alternatively, one-third of a teaspoon of red pepper added to a glass of boiled milk and drank as hot as is bearable was said to be a ‘sure cure’ (*Limerick Leader*, 15th July 1918).

‘Let Us Have Greater Cleanliness’

Disinfectants, such as Jeye’s Fluid, and soaps enjoyed a steady rise in popularity during this time and were advertised as preventatives (which they were):

Cure influenza by using honey and cayenne; Avoid it by using our disinfectant soap.

Bennis & Sons, 30 O’Connell Street

(Limerick Leader, 11th November 1918)

The inside of the nose should be washed with soap and water, and the throat should be gargled with some mild antiseptic. Where nothing better is available, soap and water should be used for this purpose as well as for the nose.

(Limerick Leader, 14th February 1919)

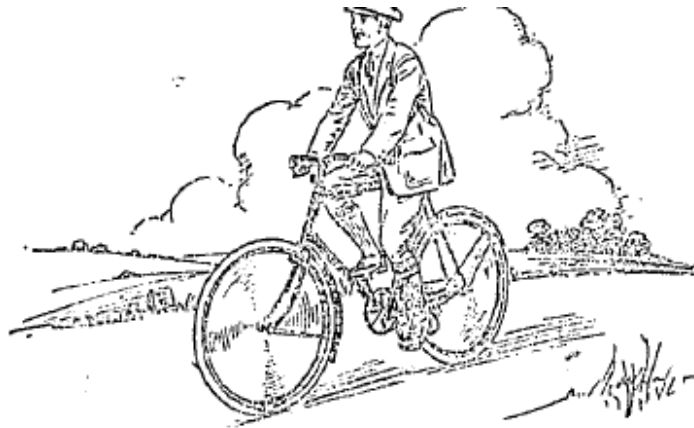
On a more public level, Dr. McGrath wrote in his *Report on the Health and Sanitary Condition of the City of Limerick* for the year 1915 that 56 houses were disinfected using gaseous formaldehyde following contagious infections.

While the promotion of disinfectants and soap is very understandable, some products offered as preventatives or cures must surely have reflected the quest for profit more than any real expectation of combating the epidemic:

Now is the time to have your teeth troubles attended to. A healthy mouth is the best protection against infection and disease. It is always those with bad teeth who fall easy victims. Make your mind up to have your bad teeth, which cannot be saved extracted.

(Limerick Leader, 21st March 1919)

An example of another unlikely improbable product would be bicycles:



BICYCLING v. INFLUENZA.



VERY few of the people who've had influenza are regular cyclists. Those who bicycle regularly have been less liable to attack.

The clean sweet air on the road is far healthier than the stuffy atmosphere inside the tram, the bus or the train, and with a pair of Dunlop tyres fitted to your machine, you're free from tyre-worry and you've reduced the actual effort of cycling to the minimum.

DUNLOP RUBBER CO., LTD.,

Founders of the Pneumatic Tyre Industry,
Para Mills, Aston Cross, BIRMINGHAM.

Dublin: Oriel House, Westland Row.
Telephone—2342, 2343 and 4084.

Dunlop

(Limerick Leader, 3rd January 1919)

The doctors and nurses of Limerick were fulsomely praised for their efforts in seeing patients and treating them. At a meeting of the Limerick Board of Guardians², reported on 30th of October 1918, the relieving officer, Mr Coffey, reported that the dispensary doctors were overworked and were requesting assistance. Mr P. Bourke, a member of the Board, said that that in addition to the over work of the doctors, many of the nurses were indisposed and unable to assist in the treatment of patients either. In the same issue of *The Limerick Leader*, an article entitled 'The Epidemic' states that the city's medical force was working almost to breaking point with a single doctor, on some days, making one hundred examinations (Limerick Leader, 30th October 1918d). By the 25th of November 1918, it was reported in *The Limerick Leader* that the Emergency Relief Committee wished to thank the doctors for their tireless efforts.

² Reports of whose weekly meetings were printed by the *Limerick Leader*, including topics discussed and outcomes

To gather an inkling of what living in the city during the epidemic was like, contemporary accounts are invaluable. Kevin Dinneen (1996) writes of his recollections of Limerick City during the influenza epidemic and details the effect it had on the way of life:

In the commercial part of the city things were quiet. Workers hurried home from work and there was no standing around for a chat. In the residential parts, the old ‘stands’ (places where men gathered in tens or more for an evening chat) were deserted. . . . There were no markets or fairs during the flu. For the most part the farmers avoided the city, unless they had very urgent business there. In the early evenings and nights Limerick City was a sad place – the streets were empty
(Dinneen, 1996, p. 52)

When they were dissolving the Emergency Relief Committee at the end of November 1918, the chairman, Mr. P. Bourke reported on their work:

They had relieved 280 families, and in some cases six and eight people were affected in some houses. There were in all 1,000 citizens relieved by the committee during that troubled crisis. Bread, milk and beef tea were given in liberal quantities.
(Limerick Leader, 25th November 1918)

Burial Records

The burial records of Mount Saint Lawrence cemetery give a particular insight into the impact of the Spanish Influenza epidemic on Limerick City. There was no other burial ground that was opening new graves in the city in 1918, so city dwellers of all classes and religious denominations were buried there, unless they had a family plot available in St Michael’s graveyard³ or elsewhere (Limerick City Council, *Date Unknown*).

The validity of using Mount Saint Lawrence records to estimate deaths in the city is supported by comparison with the *55th Annual Report of the Registrar-General for Ireland* (1918 data). The city contained 57.7% of the population of Limerick District

³ A graveyard located in the city centre, active up to about 1870

in 1911, and in 1918, Mount Saint Lawrence accounted for 61.1% of the 1,208 deaths recorded by the Registrar-General. It can safely be concluded therefore that the burial record is representative of deaths in the city.

All of the burial records of Mount Saint Lawrence from 1855 to 2008 are available on Limerick City Council's website. The records of 1918 and the first half of 1919 were transcribed from the scanned handwritten images into a spreadsheet for analysis.

The analysis seeks to answer a number of questions.

- Establish whether the general timeline of the infection's virulence, was reflected in the pattern of deaths in Limerick City.
- Verify the findings of researchers in the area as to the age cohorts affected by the epidemic.
- The third question concerns the geographical incidence of death from the disease. This was done by classifying the burials for each month in 1918 by which of the eight municipal wards the death occurred in. This also made it possible to generally indicate the possible effects of overcrowding and unsanitary conditions in the city.
- Finally, the fourth question was to estimate how many people in Limerick city died as a result of the Spanish Influenza epidemic.

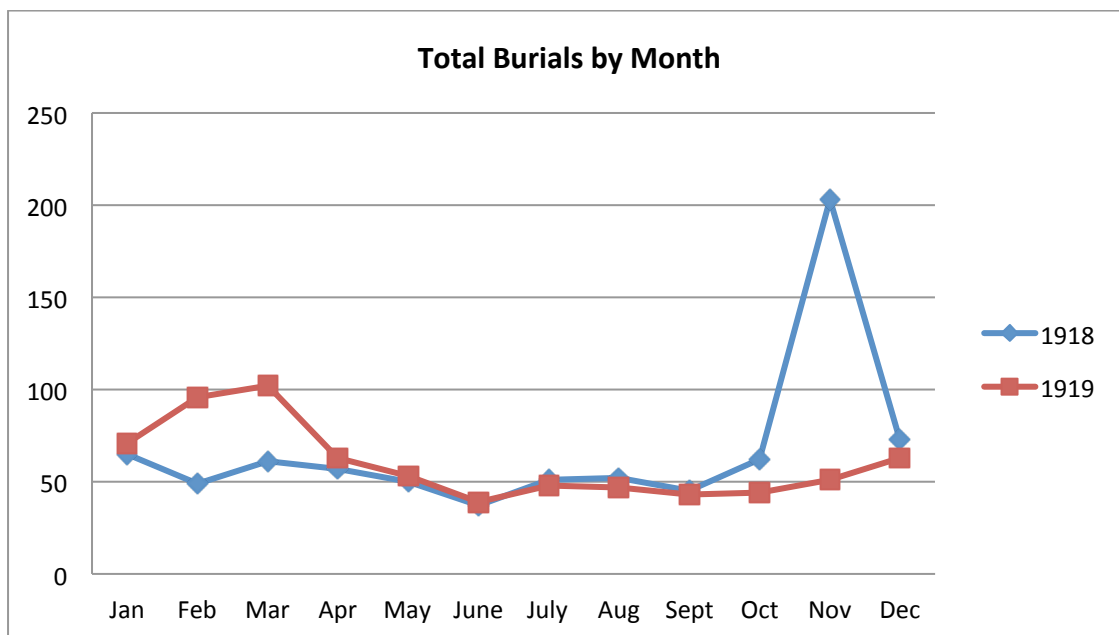
Timeline

Graph 1.1 shows total burials in 1918 and 1919. To give context to the figures, average monthly numbers of deaths were derived from the years 1913 to 1917, and 1920. Graph 1.2 shows the number of burials in excess of the average.

November 1918 in Limerick City is the period during which the infection earned the title 'Black Flu' amongst the locals, and for good reason, with 203 people being buried in 30 days. December 1918 was only 9.8 burials above the average, showing that the epidemic had suddenly abated and the death rate was returning to normal.

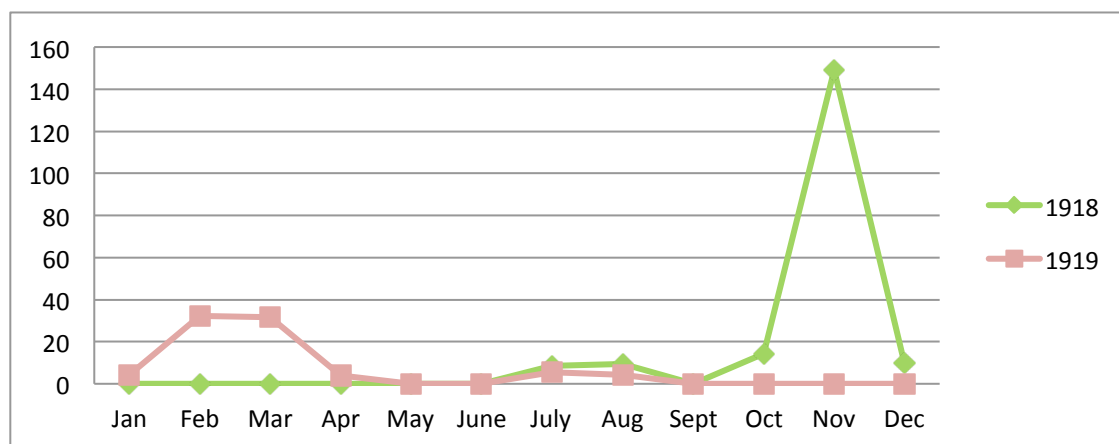
Overall, it appears that the first wave had little or no effect in early 1918. The second wave is strikingly obvious in November, and the third wave is visible, though less marked, in March/April 1919.

Graph 1.1 – Total Number of Burials in Mount Saint Lawrence Cemetery Limerick, 1918 and 1919



(Data source: Mount Saint Lawrence Burial Register, 2012)

Graph 1.2 – Number of Burials in Mount Saint Lawrence cemetery, 1918 & 1919 in excess of the average.

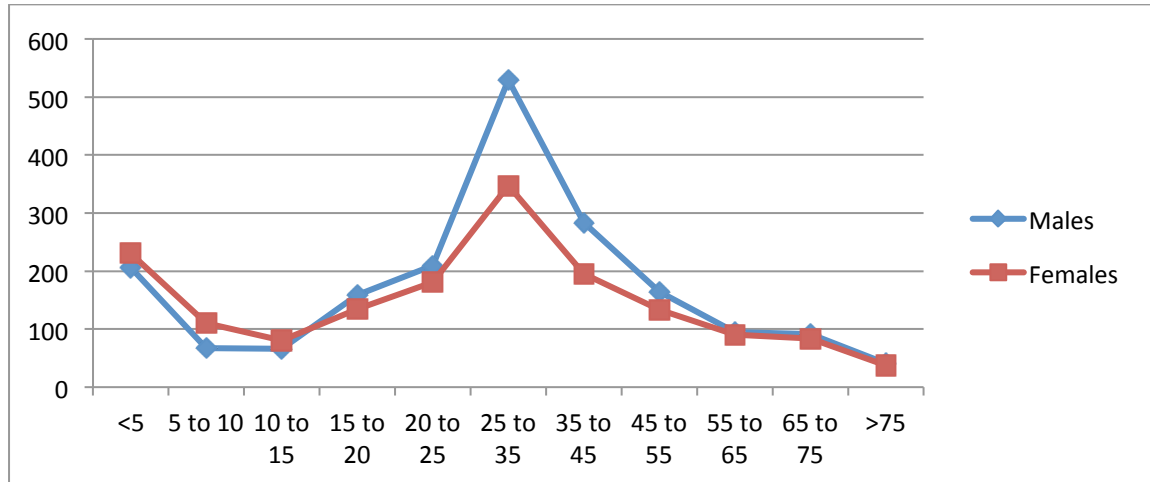


(Data source: Mount Saint Lawrence Burial Register, 2012)

Age Cohorts

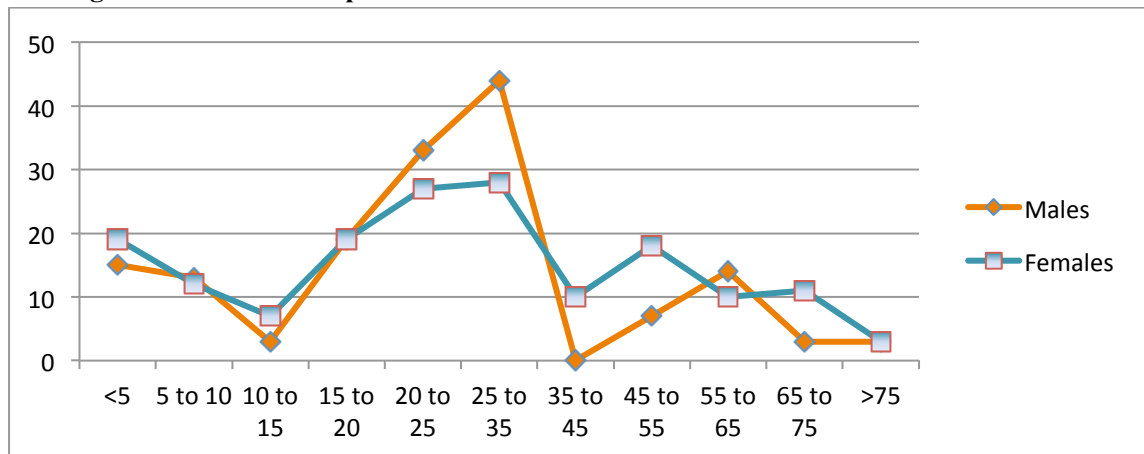
Previous research has found that the major impact of Spanish Influenza was on the 15 to 45 age bracket with lesser impact on infants and the elderly, producing what Foley (2011) describes as a distinct ‘W’ shape. Graph 1.3 reproduces Foley’s (2011) graph based on the numbers of the Registrar General, and Graph 1.4 shows the same data for Limerick County (including City). Interestingly, the mortality from influenza in Limerick does not match the mortality sequence for the country as a whole.

Graph 1.3 – Number of Deaths from Influenza for all of Ireland in 1918 according to the Registrar General’s Report



(Data source: 55th Annual Report of the Registrar-General for Ireland, 1918)

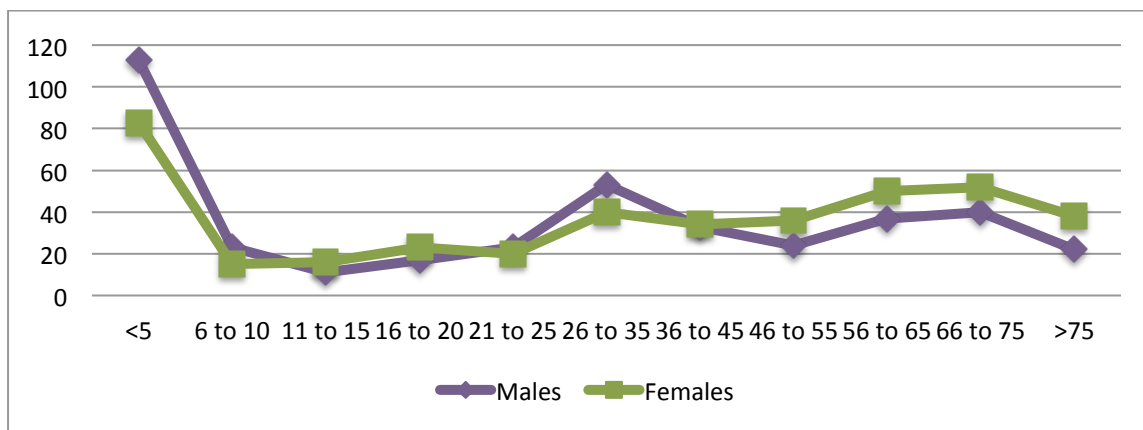
Graph 1.4 - Number of Deaths from Influenza for Limerick City in 1918 according to the Registrar General’s Report



(Data source: 55th Annual Report of the Registrar-General for Ireland, 1918)

Total burials for 1918 are shown in Graph 1.5, and the ‘W’ shape is absent, although there is a spike in the age bracket of 25 to 35.

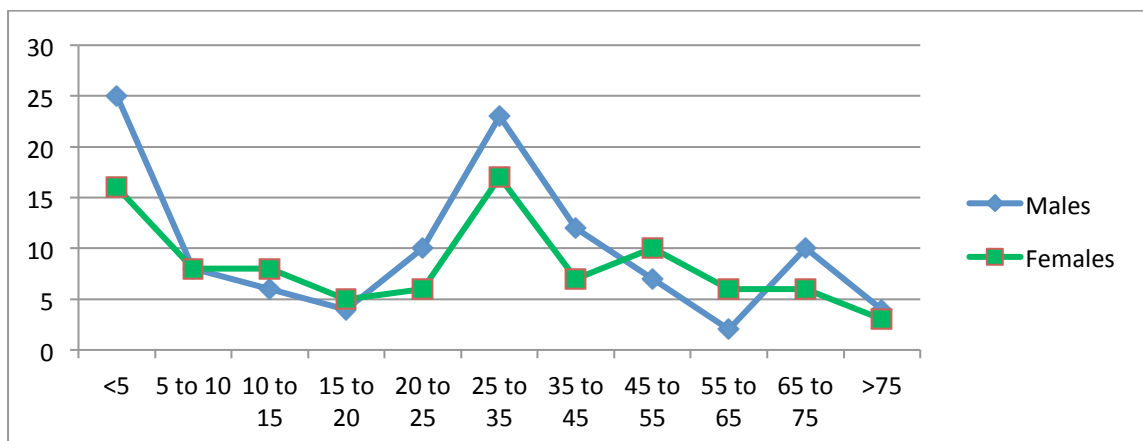
Graph 1.5 – Number of Burials in Mount Saint Lawrence in 1918



(Data source: Mount Saint Lawrence Burial Register, 2012)

Focusing on the month of the highest death rate provides the best approximation of the deaths from influenza. By taking the number of burials by age cohort just for November 1918 (Graph 1.6), we can clearly see the emergence of a ‘W’ shape, but with an unexpectedly large number of infants under the age of five, not described by any previous research. Possibly, this can be explained by the fact that deaths of infants were not always registered at this period (Milne, 2006). If so, there are grounds to question published figures for infant mortality for the period.

Graph 1.6 – Number of Burials in Mount Saint Lawrence Cemetery by age cohort in November 1918

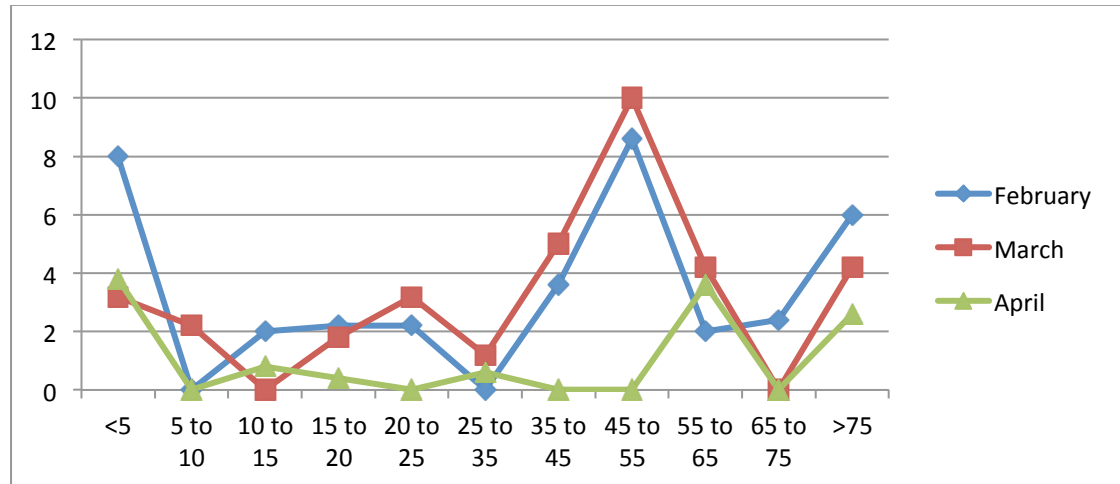


(Data source: Mount Saint Lawrence Burial Register, 2012)

The third wave seems to have affected a different age cohort than the second wave. The interesting aspect of Graph 1.7 is that the age brackets most affected in March 1919 appear to be infants and those between 35 and 65. Possibly, this change in victimology can be explained by a mutation in the virus. As we know from studies

conducted around the epidemic, the virus seems to have had the ability to mutate relatively quickly (Foley, 2011).

Graph 1.7 – Number of Burials in Mount Saint Lawrence cemetery by age cohort for February, March and April 1919



(Data source: Mount Saint Lawrence Burial Register, 2012)

The impact of the second wave is remarkable in absolute terms and in its shifting of age cohort shares, especially in the 1 to 5 age cohort. Table 1.1 shows burials in November 1918 in the context of the average November burials for each age cohort in the years 1913 to 1924, excluding 1918.

Table 1.1

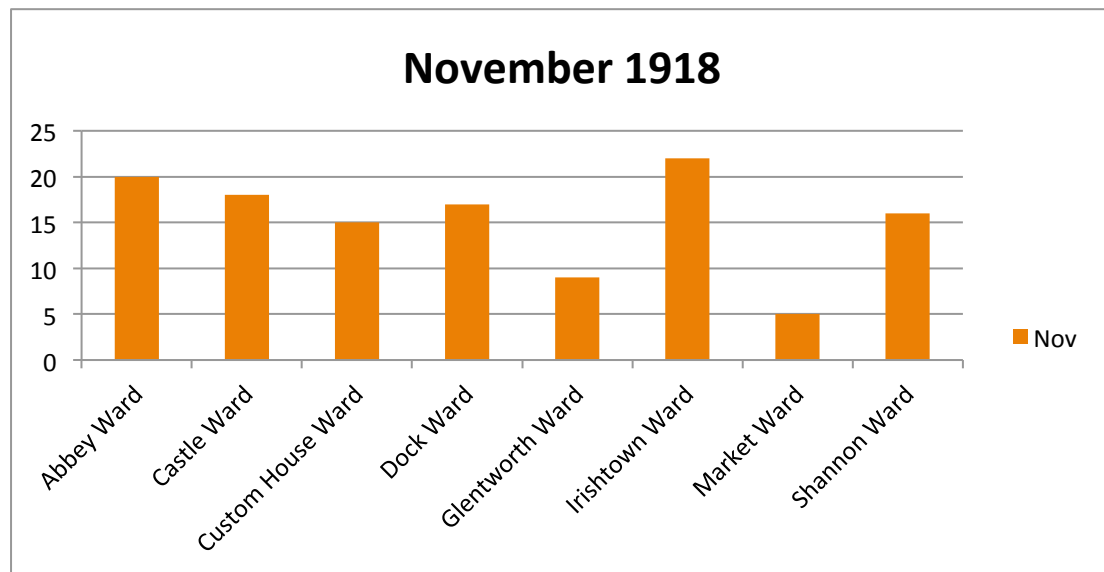
November 1918 Analysis of Deaths by Age Cohort					
Cohort	Av. Deaths	1918 Deaths	Increase	Average %	1918 %
0 < 1	8	9	1	16%	4%
1 < 5	5	36	31	10%	18%
5 < 10	1	15	14	2%	7%
10 < 15	1	11	10	1%	5%
15 < 20	2	13	11	5%	6%
20 < 25	1	16	15	3%	8%
25 < 30	1	26	25	3%	13%
30 < 35	2	16	14	4%	8%
35 < 40	2	10	8	4%	5%
40 < 45	2	10	8	3%	5%
45 < 50	3	7	4	6%	3%
50 < 60	5	8	3	11%	4%
60 < 70	7	12	5	14%	6%
70 < 80	8	11	3	16%	5%
80+	2	3	1	3%	1%
	51	203	152	100%	100%

(Data source: Mount Saint Lawrence Burial Register, 2012)

Geographic Analysis of the Incidence of Spanish Influenza in Limerick City

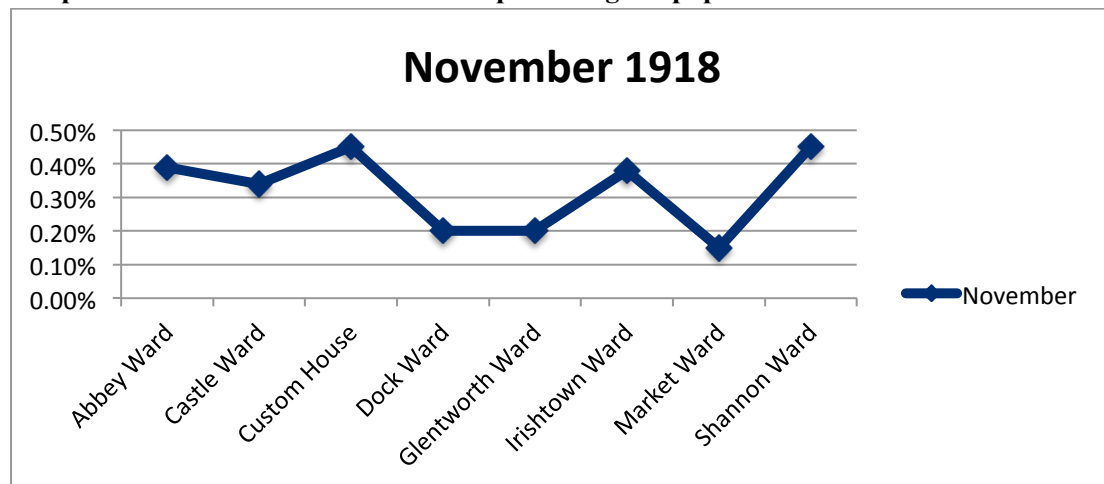
Limerick City was divided into eight wards; matching the address from the burial record with its appropriate ward allows analysis of impact by area. As can be observed in Graph 1.11, in November 1918, the highest number of deaths occurred in Ward 6 (Irishtown Ward) followed by Ward 1 (Abbey Ward) and Ward 2 (Castle Ward). However, as a percentage of the population, Graph 1.12 shows that Ward 3 (Custom House Ward) and Ward 8 (Shannon Ward) were the highest. This then begs the question of whether or not overcrowding had any effect on influenza deaths.

Graph 1.11 – Number of Burials in Mount Saint Lawrence Cemetery by Ward in November 1918



(Data source: Mount Saint Lawrence Burial Register, 2012)

Graph 1.12 - Deaths in November as a percentage of population of wards



(Data source: Mount Saint Lawrence Burial Register, 2012)

Two tables outlining the population by ward and by housing density, published by Dr Michael McGrath, the Medical Superintendent Officer of Health (McGrath, 1916) are reproduced as tables 1.2 and 1.3:

Table 1.2 – Population and Area of wards

Ward	Ward Number	Population	Area in Statute Acres	Average number of people per acre
Abbey Ward	1	5,085	823	6.17
Castle Ward	2	5,179	711	7.28
Custom House Ward	3	3,264	51	64
Dock Ward	4	8,125	441	18.42
Glentworth Ward	5	4,489	166	27.04
Irishtown Ward	6	5,643	63	89.57
Market Ward	7	3,219	74	43.5
Shannon Ward	8	3,514	57	61.64

(Data source: McGrath, 1916)

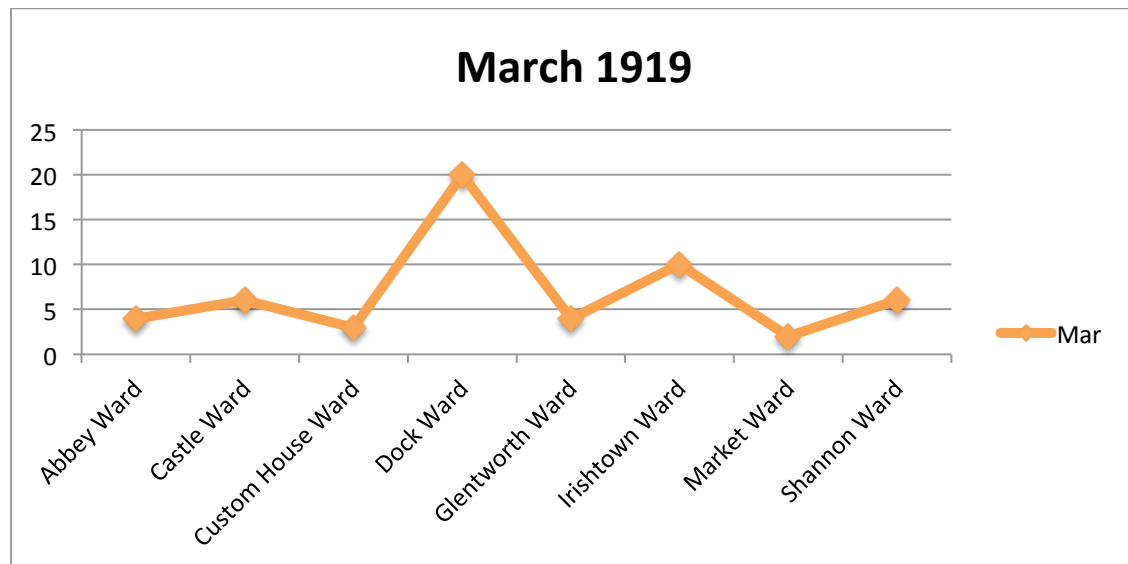
Table 1.3 – Number of Houses and number of People by Ward

Ward	Ward Number	Population	Inhabited Houses	Average Number of people per house
Abbey Ward	1	5,085	776	6.55
Castle Ward	2	5,179	901	5.74
Custom House Ward	3	3,264	359	9.09
Dock Ward	4	8,125	1,244	6.5
Glentworth Ward	5	4,489	779	5.7
Irishtown Ward	6	5,643	849	6.64
Market Ward	7	3,219	415	7.75
Shannon Ward	8	3,514	484	7.2

(Data source: McGrath, 1916)

Wards 3, 6 and 8 are indeed among the most densely populated, with an exceptionally high number of people per house in Custom House Ward (No.3). It would be reasonable to surmise that living in such conditions did have an effect on the progress made by Spanish Influenza during the second wave, but the experience of Ward 1 suggests that other factors, such as quality of housing or nutrition, may also be relevant. In this regard, Graph 1.13 shows an interesting change in trend, with Ward 4 (Dock Ward) now most affected. This ward was characterised by a high concentration of tenements and council built housing (*Report on the Health and Sanitary Condition of the City of Limerick for the year 1915* (1916))

Graph 1.13 – Number of Burials in Mount Saint Lawrence Cemetery by Ward in March 1919



(Data source: Mount Saint Lawrence Burial Register, 2012)

How Many People Died?

The actual impact of Spanish flu on Limerick in terms of deaths can only be estimated by comparison with ‘normal’ death rates. Table 1.4 shows the total burials by age cohort and month over the period March 1918 to May 1919. The months in which Spanish flu was prevalent are highlighted in yellow, and clearly had a higher death rate. For comparison, an average or ‘normal’ death rate by month and age cohort was derived for years 1913 to 1917 and 1920, excluding outliers to eliminate other health events such as cholera, dysentery and enteric fever which are known to have occurred.

	<1	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-80	81+	Sum
Mar-18	5	10		1		2	1	5	4	3	3	10	3	8	6	61
Apr-18	6	5	1	1	5		5	2	4	2	4	8	3	6	3	55
May-18	8	5	1	1	2	2	2	2	3	1	4	4	6	7	2	50
Jun-18	5	3	3		2	3	3	1	2	2	2	5		5		36
Jul-18	7	3	1		3	1	4	2	2	2	2	6	8	8	2	51
Aug-18	11	8	1	1	1	1		3	5	1	4	3	7	4	2	52
Sep-18	6	3	1	3	3	4	2	1	1	1	5	4	6	5		45
Oct-18	8	4	1		2	4	5	3	2	3	3	9	7	9	2	62
Nov-18	9	36	15	11	13	16	26	16	10	10	7	8	12	11	3	203
Dec-18	10	8	5	3	2	4	2	2	4	1	4	8	9	10	1	73
Jan-19	9	4	2	1	4		2	4	5	1	7	8	8	9	7	71
Feb-19	11	9	2	4	3	5	3	1	2	6	10	9	11	14	5	95
Mar-19	12	11	3		5	6	6	1	7	2	7	17	11	11	3	102
Apr-19	7	8		2	2		5	1	1	1	4	10	9	9	4	63
May-19	8	3		1	2	1	4		5	2	3	6	6	9	3	53
Totals	122	12	36	29	49	49	70	44	57	38	69	115	106	125	43	107
Influenza	50	68	26	18	25	35	42	23	25	22	31	51	50	55	14	535

(Data Source: Mount Saint Lawrence Burial Register 2012)

The result is shown in Table 1.5. The variation seen in the non-influenza months illustrates the inexactitude of estimation, but the months highlighted are clearly exceptional. This method estimates the number of deaths at **268**. The population of Limerick in 1911 was 43,358, with perhaps another 5,000 if surrounding catchment areas were taken into account. This suggests a death rate from Spanish flu of 5.56 per thousand. The national death rate has been estimated at 10,000 in a population of 3.1 million, a rate of 3.22 per thousand, suggesting that urban death rates were much higher than rural, as one would expect.

TABLE 1.5

Above-Average Deaths by Age Cohort and Month

Note: figures are rounded, which results in apparent addition errors.

	<1	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-80	81+	Sum
Mar-18								3	2			5			4	14
Apr-18					3		2		2		2	2				11
May-18																
Jun-18			2													2
Jul-18					2								3	3		8
Aug-18	6	3						1	3							13
Sep-18				2	2	3					2					8
Oct-18	3					3	3	3				4	2	4		21
Nov-18		30	14	10	11	15	24	14	7	9	4	3	6	5		151
Dec-18	4		3	1		2			2		2	3	3			18
Jan-19					2			2			4	2			5	14
Feb-19	4	4		2	2					4	8	2	4	7	3	40
Mar-19			2			3	3		5		3	12	5	4		37
Apr-19		3					2				2	4	1	2		14
May-19														2		2
Totals	17	41	21	15	20	25	35	22	21	13	27	36	24	27	12	353

(Data source: Mount Saint Lawrence Burial Register, 2012)

Concluding Remarks

This study began with the question of ‘what were the effects of Spanish Influenza on the mortality rates in Limerick City from 1918 – 1919?’ In the course of research, I discovered that it is impossible to look at a phenomenon like this horrific infection in isolation. The surrounding environment of the city at the time needed to be examined to find out how people lived and in what conditions. This showed that the effects of the disease were compounded by Limerick’s particular infrastructural deficits and poverty, despite it being a successful industrial and trading city at the time.

In answering the questions I began with, some of the results were as expected and congruent with previous studies, and some were quite different.

- The timing of the second and third waves coincided with experience elsewhere, but the first wave had no discernible impact.
- The age cohort analysis gave a mix of results. While those in the 25 to 35 age bracket suffered as expected, the worst impact seems to have been on the 1 to 5 age cohort, which has not been recorded elsewhere, although there is no obvious reason why Limerick’s experience should be so different from elsewhere. Perhaps infant deaths were often unreported.

- The geographic analysis showed that the likelihood of being infected, and therefore the likelihood of dying, increased due to overcrowding and poor living conditions.
- The overall number of people who died in Limerick as a result of the disease can, as stated previously, never truly be known. However, a reasonable estimate of 268 was derived, representing some 5.56 deaths per 1,000 population. According to the Registrar General, an average of 3.22 per 1,000 died of Spanish Influenza in Ireland.

The impact the Spanish Influenza epidemic had on Limerick City was immense. According to Kolata (1999), the mortality rate of those infected with Spanish Influenza was one in forty. This highlights the enormity of the impact on Limerick, where the 268 (estimated) people who died represent an infected population of over 10,000, almost a quarter of the city populace.

It can never be truly known how many people in Limerick (and worldwide) died during the Great Flu. What is certain is the atmosphere of fear and dread that pervaded Ireland (and the World) during the epidemic. It is remarkable that such a catastrophe is so little reflected in popular memory.

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