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INFECTION FROM FAMINE TO FEAST [1]

Introduction

Private medicine flourished in the large cities in Ireland at the end of the 18th century but it did not make professional or economic sense for physicians or surgeons to set up privately in rural areas. This left rural communities bereft of medical care until the establishment of the medical charities. By 1830 they were well established with the county infirmaries starting in 1765, the dispensaries (initially an offshoot from the county infirmaries to cover areas some distance from the infirmaries) in 1805, and the fever hospitals in 1807.

The development of each had been aided by legislation and they were at least partially funded by the 'Cess'—a local property rate levied by the Grand Juries. The county infirmaries attracted the most favourable funding. In his book on Medical Charities, Cassell describes them at this time as "numerous and generous" if not uniform. The charities were not however without their critics and when the Poor Law was extended to Ireland in 1838 it was the aim of the government to bring the Medical Charities under the control of the Poor Law Commission. There was great anxiety among doctors in Ireland about this and it took seven attempts from 1836 to 1851 to finally get the Medical Charities (Ireland) Act through parliament.

When it was eventually passed it only provided for control of the Dispensaries—hence it is customarily referred to as the "Dispensary Act". Not least among the catalysts which led to the passing of the Act, was the devastating effect of the Great Famine.

The village of Dunmurry

The village of Dunmurry, where I practice, is placed equidistant from Belfast and Lisburn in the Lagan Valley and is connected to each by road and since 1839 by a railway. It was originally a Linen Village. Rev J Dubourdieu in his statistical survey of County Antrim in 1812 described it thus:

> "The situation of Dunmurry, on one of the roads leading from Belfast to Lisburn, has many beauties, the hills around it, ornamented with planting, are strikingly beautiful; and though it lies low, it is dry, the soil mostly sandy or gravely loam; upon the whole it is one of the most charmingly sequestered, though small, districts which this county affords."

Dunmurry was fortunately less affected than many parts by the famine and Common records the following factors which helped Dunmurry residents to cope; a range of grain crops, root crops and livestock were available in this period, innovative introductions in the linen trade of wet spinning and steam driven machinery sustained job and wage prospects, and the rise in foodstuff prices could be offset by the fact that many residents were wage earners in textiles or with trades and were thus not over dependent upon agriculture.

The Derriaghy parish burial register

In November 1827 a curate in the Parish Church of Derriaghy, which lies two miles from the centre of Dunmurry, started to record the cause of death in the Parish Burial Register. The tradition was carried on and with the exception of the years 1835–1843 this provides a chronicle of the cause of death for some 6,000 burials between 1827 and 1927.

Typhus

In the Derriaghy Register for the years 1843–49 which covered the famine years, there are 40 deaths from "Fever", 26 of these occurring in 1847. It is assumed that most of these were Typhus although a small number could have been due to relapsing fever or trench fever.

Typhus, long endemic in Ireland, reached epidemic proportions when thousands, weakened by malnutrition due to successive crop failures, became victims of the disease.

This led to an epidemic in 1846. Epidemic Typhus, known as "Jail fever" or "Famine fever" is louse borne and occurred when the debilitated, infested with lice, were huddled together for warmth and shelter. Those who could travel carried the infestation and infection with them (then known as "Road fever") as they moved from poorer regions to the more affluent in search of food and employment.

[1] *Ulster Medical Journal*, 2010, v79, p89.

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The Typhus epidemic started in Ireland in 1846 in the West and came to Ulster in the winter of 1846–47. In 1847 in Belfast, 1 in 5 persons was attacked by fever and in Lisburn the parish priest and the Quaker owner of the Island Spinning Company died as they worked among the poor of the community. Typhus has the ability to kill large numbers of people and has a mortality, if untreated, between 10% and 60%. An outbreak in England in the 16th century killed 10% of the population and during Napoleon's retreat from Moscow more soldiers died from Typhus than were killed by the Russians.

Nor were doctors in Ireland immune. During the years March 1843 to January 1848, 199 medical men died of 'fever' in Ireland. 8% of medical officers appointed to fever duties in the years 1840–46 died on duty. One of the curious features of Irish fever epidemics, which has never been fully explained, was that the wealthy who took 'the fever' had a higher fatality rate than the poor. This phenomenon was noted in both the 1816–19 outbreak of fever and the epidemic associated with the famine. Incidentally Typhus also took the life of Rev A G Malcolm, one time Minister of 1st Dunmurry Presbyterian Church and father of Dr A G Malcolm one of Belfast's leading physicians and medical historians in the 19th century. He is buried in Dunmurry. Compounding the deaths due to starvation and Typhus in 1849 a Cholera epidemic struck Ireland. It is estimated that this took 30,000 lives. Three hundred cases were reported in Lisburn with 92 deaths and the records in Derriaghy record 10 deaths between 1843–49.

After this triple onslaught, doctors in the medical charities relying on voluntary subscriptions agreed something had to be done. The subscription component of the Dispensaries (which was normally 50%) fell by up to two thirds of previous levels as those who would have contributed were heavily taxed for famine relief and the Fever Hospitals were totally overwhelmed with Typhus and Cholera. A meeting of dispensary doctors and fever hospital medical officers in the College of Surgeons in January 1851 gave their support to the new Medical Charities Bill about to go through Parliament. When it eventually passed however, it excluded the fever hospitals. The infirmary surgeons, less dependent on voluntary subscription, had pressed hard to be excluded and achieved their aim.

The Medical Charities (Ireland) Act 1851— The Dispensary Act

In the autumn of 1851, the medical profession in Ireland awaited the first moves of The Poor Law Commission under the new Medical Charities (Ireland) Act of 1851. The Act had provision for a medical commissioner at The Poor Law Commission. They appointed Dr John McDonnell, the Professor of Anatomy at the Irish College of Surgeons. The Commission was responsible for rules, regulation and monitoring. At the next level of responsibility were the 163 Boards of Guardians who each supervised one Union. They were responsible for financial arrangements, paying the medical officers in each of their dispensary districts and furnishing medicines and medical supplies to them.

Below this at the local level were the Committees of Management who met every two weeks, exercised control over dispensary medical relief, authorised medical treatment by ticket and appointed the medical officer to the Dispensary. Minutes of their meetings were assiduously kept and I am lucky enough to have had access to the Dunmurry Committee of Management Minute Book. Dunmurry was part of the Lisburn Union.

The first minute tells how on 21 February 1852 four men met "at Miss McMaster's Inn agreeable to a Resolution of the Board of Guardians of the Lisburn Union and convened by the Clerk of the Union". They requested "that the Medical Officer of the Dunmurry Dispensary be requested to furnish to the Committee a list of the requirements and medical appliances for the use of the Dispensary for the ensuing month." The Dunmurry Dispensary was up and running just three months after the initial order from the Poor Law Commission to the Lisburn Board of Guardians.

Cholera

The first reference to infectious disease in the minute book occurred on 25 September 1854. It referred to "a communication to the Secretary from the Secretary to the Poor Law Commission dated 20 September 1854 re the best mode of treatment of Cholera etc etc". This undoubtedly referred to advice prepared by The Irish Central Board of Health in 1848-49 and modified by The Irish College of Physicians in 1853 and hinted at standardisation of treatments across the Dispensaries of Ireland—could this be the first "guideline"? On the same date it was noted that "from the extent of the district and the prevalence of diarrhoea and alarm of Cholera for some time the sick poor of the district cannot be attended to as they ought by one person. The secretary be authorised by this Committee to write to the Commissioners for an assistant to the Medical Officer."

There then follows the letter sent to the Commissioners in Dublin. An extract is as follows:

> "The Medical Officer is suffering indisposition from over-fatigue his duties of late having been most harassing. Several points in the District lie four miles distant from his residence and by the time he could pay three visits in the day to patients residing in such localities it would be physically impossible to give immediate attention to such new and urgent cases as must, from time to time, arise during an epidemic. Nature demands certain hours for sleep and refurbishment and we cannot be so inhuman as to exact these from any man, nor at the same time must we allow the suffering poor to be without the aids so thoughtfully provided for them by the Law.
>
> We earnestly entreat you to consider our case with the least possible delay as Cholera may be in the very midst of us in a moment and immediate assistance, alone, be the means of preventing its spread."

The urgency transmitted in this note undoubtedly comes from those who feared Cholera having already seen two epidemics claim tens of thousands of lives in Ireland. The next entry on 7 October 1854 asks that

> "A report be prepared and forwarded to the Commissioners calling attention to the Cholera cases of the lockhands and others about Drumbridge."

A minute on 9 October 1854 notes that no Assistant Medical Officer has been appointed as requested. It also asks the Guardians "to appoint a man to inspect the Dunmurry Dispensary District for the purpose of having filth and nuisance removed as the Committee think that much disease might be prevented by rigorous examination of Cottier[1] houses".

I feel this entry refers to powers originally given to the Lord Lieutenant under the Nuisances Removal and Diseases Prevention Act of 1848 (often called the Cholera Act), but now given to the Poor Law Commission. This allowed the Commission to place any part or all of the country under the authority of the Act by issuing a Cholera Order. The Guardians would then be responsible for supervising the cleaning of streets and public places, removing 'filth', burying the dead and providing medical facilities, medicines and care for persons in need. This could include house to house inspections. Note that care was given to persons in need and that no ticket was necessary for care in these circumstances. Under a Cholera order medical officers were designated 'medical officers for the treatment of diarrhoea and cholera' and were required to give immediate aid and medicine to all persons complaining of looseness of the bowels, diarrhoea or cholera itself. When the disease was detected the patient was normally transferred to hospital and the home cleaned, whitewashed, and otherwise purified.

Cholera causes death in 10-50% of untreated cases and can cause death in 2-3 hours in severe untreated cases. The bacterium was identified by Koch in 1884 and is transmitted by ingesting contaminated water or food. Although this information was not available to the Poor Law Commission, by prudent measures to improve sanitation and prompt medical care this 3rd Cholera epidemic in Ireland only caused 2600 deaths compared with 24,000 in England (i.e. approximately one third of the number expected). It is also gratifying that the Commission recognised the extra duties which the medical officers to the Dispensaries had to perform during the epidemic and recommended extra payment. Dr Plaine in Dunmurry was given £17-10-0 for the extra duties performed i.e. doubling of his salary for that quarter.

From 17 September 1854 to 15 December 1854 there were 17 cases of diarrhoea and 16 cases of Cholera in the Dunmurry Dispensary District. Interestingly, no cases of Cholera were recorded in the Derriaghy register during that period.

Smallpox

Protection against smallpox in Belfast has a long history. Strain, in his history of Belfast and its Charitable Society quoting a recommendation to a meeting of the Board on 9 March 1782, records "Dr Drennan produced and read a paper setting forth the utility of a mode of public inoculation being introduced into this house and supported by its countenance". In June of that year Dr Drennan was thanked for the "Scheme of Inoculation".

Inoculation undoubtedly referred to arm to arm infection with virulent smallpox, a technique brought back to England by Lady Mary Wortley Montague on her return from Turkey. This was 16 years before Jenner published his work with cowpox: "An Inquiry into the cause and Effects of Variolae Vaccinae", i.e. "vaccination". Remarkably vaccination with cowpox was started by the Charitable Society in Belfast just two years after Jenner's publication. This is all the more amazing as Jenner's work did not initially meet with general public (see Gilray cartoon) or professional acclaim.

[1] Person who hires a small cottage with or without a plot of land.

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Smallpox had a bad reputation in the 18th century, killing 1 in 14 of the population or 1 in 5 of those who contracted it. It led to the expression "don't count your children until they have had the smallpox". The Derriaghy register only records six deaths from smallpox from 1827–34 and 14 from 1850–59 and this may be because vaccination was having some protective effect.

In 1840 the Vaccination Act made variolation illegal and provided vaccination free of charge to anyone who wanted it. This Act also made the Poor Law Commission the responsible agency throughout the United Kingdom. This was one of the first efforts at state medicine. The Commission were able to employ doctors to perform this service. In Ireland the rate was 1/- per patient for the first 200 patients and then 6d per patient. This must have been the first medical contract with a perverse incentive and unsurprisingly it did not achieve its aims and led to a disgruntled profession especially as their colleagues in England were paid 1/6 per vaccination. Under the new Dispensary Act, Dispensary medical officers were to vaccinate all patients free of charge. In 1853 vaccination was made compulsory in England and Wales for all children of 3 months of age but this did not apply in Ireland. In 1856 Dr John Hill, a medical inspector in Ireland, reported that there was a general reluctance for parents to bring their children to the Dispensaries for vaccination for fear of contagion. Farmers did not want to bring them in the heat of Summer or the cold of Winter and they were too busy in Spring with planting and Autumn with harvesting. As a result only one third of children were being vaccinated.

This situation was reflected in an entry in the Dunmurry Dispensary minute book of 7 November 1857:

> "Notwithstanding the efforts of this committee and their M.O. to encourage vaccination in this district, very few families comparatively avail themselves of the advantage offered, perhaps not 1 in 10 of their children born in this district have been presented for vaccination. The committee consider this is a very unsatisfactory state of things and would suggest that some measures be taken by Government to consider compulsory, in this country as in England, the vaccination of children".

These sentiments must have been echoed in other Dispensary Committees throughout Ireland and in 1858 Lord Naas put through 'An Act to make further provision for the practice of vaccination in Ireland'. This Act entitled medical officers to be paid £1 for every 20 successful vaccinations. Each Dispensary district was to be divided into separate vaccination districts with a vaccination station located out in the countryside away from the Dispensary to take account of parental fears about contagion and to be convenient for the farm labourers in the Spring and Autumn. We can see the outworking of this Act in the Dispensary minutes of 4 October 1858

> "In conformity with the Directions of the Commissioners contained in their circular letter dated 24th August 1858 this dispensary district be divided into 4 Districts, namely, The Electoral Division of Drumbeg with a station at or near Mr Orr's parish schoolhouse, The Electoral Division of Derriaghy the station at or near Collin parish schoolhouse, The Electoral Division of Malone (except the townland of Dunmurry) station at or near Lismoyne schoolhouse. The townland of Dunmurry comprising the village the committee recommend to be formed into a fourth district with the Dispensary as a station" ... "the schoolhouses referred to can be had for a few hours each autumn and spring."

A fifth station was added at Hilden over 30 years later in December 1891. Initial national results were encouraging, showing increased uptake of vaccination, but once again the number of vaccinations fell and scrutiny of returns showed a great variance in performance between Dispensaries. It was felt that linking registration of births to vaccination might improve rates and in 1864 two Acts were passed and came into effect—The Birth and Death Registration (Ireland) Act and The Compulsory Vaccination (Ireland) Act. This allowed Dispensary medical officers to become Registrars of Births and Deaths thus supplementing their income and as they were the public vaccinators the linkage was achieved. It was not however compulsory for the medical officer to become registrar. Parents would be fined 10/- for non-compliance with the Vaccination Act.

These measures had the desired effect and smallpox deaths, in Ireland, which had fallen from 6000 per year in the 1830s to 1700 per year in the 1850s (showing some benefit from the earlier arrangements) fell to a total number of 338 cases over the four years 1867–70, of which 99 died. On further analysis of these 99 deaths 67 had occurred in a two-week period in 1868 and could be directly traced to the work of a single inoculator. The poor in Ireland had a preference in favour of inoculation with small-

pox virus in the 1850s and 1860s as the inoculators were peasants themselves.

From 1870–73 a lethal smallpox epidemic stormed through Europe. 44,000 died in England and Wales. The epidemic came to Belfast in 1871. In the three years 1871-73 approximately 4200 died of smallpox in Ireland i.e. less than half of those expected by the England and Wales figures. This success was put down to quick isolation of patients in workhouse infirmaries or fever hospitals plus vaccination of contacts.

Typhoid

Typhoid was often confused with other epidemic fevers associated with a rash especially Typhus from which it takes its name. The accurate clinical picture was first described in 1659 by Thomas Willis. The term typhoid was first used in 1829 and in 1837 Gerhard clearly distinguished between the clinical pictures of Typhoid and Typhus.

It was not however until a paper by Jenner in 1850 that the clear distinction between the two diseases was accepted by the profession. He also showed that typhoid, unlike typhus, was no respecter of class affecting both rich and poor alike. (Prince Albert the Prince consort died in 1861 from typhoid). William Budd between 1856 and 1860 showed that typhoid was transmitted when infected material in faeces contaminated milk, water, or the hands of those who tended the sick. In the Derriaghy register Typhoid is only mentioned on one occasion as a cause of death. The minute book of the Dispensary however on 5 March 1888 reads—

> "Dr Gaussen drew attention of the Committee to an outbreak of Typhoid Fever in Lambeg which he attributed to the use of impure water taken from a well in the district and which he believed to be impregnated with sewage matter. He was requested to report the matter to the Board of Guardians so that they might have the water analysed."

This was just eight years after Eberth had discovered Bacillus Typhosus and four years after it had been successfully cultured.

On 7 May 1888 Dr Gaussen was able to report that "The well at Lambeg—which was found to be impregnated with sewage matter, had been closed and a new pump erected."

Another outbreak of typhoid occurred in November 1891 with three cases in Dunmurry and several in Hilden.

From the 1870s across the United Kingdom sewerage systems and piped water supplies were being installed. Belfast sewerage was installed in the 1880s. Although Belfast and Lisburn had their own piped water supplies in the mid 1800s it was 1903 before the whole of Dunmurry village had been included in the piped supply from Belfast Water Commissioners, but Lambeg and Derriaghy were still relying on pumps at that time.

Tuberculosis

The Dispensary minutes have only mentioned the three diseases, which tended to occur in epidemics, as these probably caused most fear—cholera, smallpox and typhoid.

The biggest killer by far was a disease which was endemic in the 19th and first half of the 20th century —tuberculosis. This was recorded in the Derriaghy register as "Decline" and accounted for 15+ deaths per year (20 to 30 percent of the total).

There was obviously no treatment available and life expectancy was between 4–10 years from diagnosis. It would be the 20th century before "open-air treatment" in Sanitoria was available although a local physician Henry McCormack of Belfast presented a paper to the Royal Medical and Chirurgical Society of London in 1861 on the evils of rebreathed air (The True nature and Absolute Preventability of Tubercular Consumption).

Unfortunately he was ahead of his time, his paper was rejected and they scornfully refused him a vote of thanks.

Other infections

To determine what other infectious diseases were significant in the 19th century in causing death I have to again turn to the Derriaghy register. Scarlatina caused 3-4 deaths per year. Pertussis caused 1-2 deaths per year and from 1880 onwards Influenza caused one death per year. Croup caused one death per year from 1850-1880. Measles averaged less than one death per year. I have estimated the community round Derriaghy Parish Church to have been approximately 2000 people.

We have now reached the turn of the century. By now Dunmurry had its new Dispensary house built in 1890 and still the base for our surgery today.

Looking back we see that within twenty years the Dispensary Act had created a system of primary medical care in Ireland not matched in England until The National Insurance Act of 1911 or some would say until the introduction of The National Health Service. Cassell states:

> "A hodge podge of largely unorganised, unsupervised and uncoordinated medical facilities had been welded into a rationally administered nationwide system providing the Irish Poor with the most comprehensive free medical care available in the British Isles. At the same time the value of the dispensary system for epidemic control and vaccination had been amply demonstrated."

The keys to this change were the central direction from the Poor Law Commission with able administrators, a medical director and medical inspectors, plus the more liberal interpretation as to who was entitled to medical care under the Poor Law. In England only the unpropertied and chronically unemployed paupers were entitled whereas in Ireland "poor persons" (a term left deliberately ambiguous) were entitled. The success of the Irish Dispensary system had implications for the development of state medicine in England. The Irish experience began to affect English public health policy and administration from the 1860s and was a factor in contributing to the gradual change in official and public opinion which eventually made a state health service acceptable.