One family's small unrecorded role in reforming the Victorian public health system

Valda Shrimpton

William SHRIMPTON was baptised 28th June 1782 in New Alresford, Hampshire. He married Elizabeth nee Francis, born circa 1787 in Pontypool, Monmouthshire, on 11th April 1812 at St. Magnus the Martyr in the city of London. The couple had eight (known) children between 1812 and 1827, during which time William was employed as a gamekeeper in Surrey. He was licensed to shoot game on the Manor of the Earls of Onslow (from 1812-1814) and resided with his family in Worplesdon. The children were baptised in West Clandon, Send & Ripley and latterly Great Bookham. On the 1841 census William was still a gamekeeper but living back in West Clandon. Age and infirmity were beginning to tell and, by the 1851 census William was a dog breaker, lodging alone at the Horse and Groom public house in Merrow. Elizabeth, his wife, was in Leatherhead with their newly widowed daughter-in-law, now the sole parent of four children all under the age of nine, following her young husband's death of 'caries (decay) of the spine'. By the 1861 census Elizabeth had died and William was residing in Guildford workhouse where he passed away on 1st March 1865 of 'erysipelas (fever producing deep red skin colouration) and gangrene'. He was buried on 8th March in West Clandon.

There was no trace of Elizabeth's death in Surrey. In the late summer of 1854 she had made the fateful decision to visit her widowed younger sister. Margaret FRANCIS had married John GREATHEAD at St. Martin in The Fields in 1824, and had subsequently been the widowed licensee of the Public House at 12 Little Windmill Street, St James Berwick, Westminster since at least the 1851 census. On 2nd September 1854 after seventeen hours Elizabeth Shrimpton died of cholera, a victim of the raging epidemic in the district, one of a hundred and twenty-seven people whose lives were taken on that same day.

The Golden Square cholera epidemic

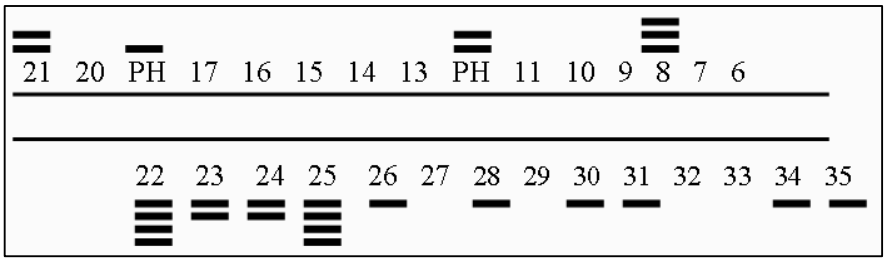
Dr. John SNOW, who lived locally, monitored the deaths. He saw the outbreak as an ideal opportunity to further his previous researches which had convinced him that cholera was passed through contaminated water. He noted that, within a ten day period, there had been upwards of five hundred deaths close to the spot where Cambridge Street joined Broad Street. He suspected the source of the outbreak was the street pump situated in Broad Street. Snow requested details from the General Register Office of the deaths from cholera that had been registered for Saturday 2nd September and for the two days proceeding, in the three sub-districts of Golden Square, Berwick Street and St. Ann's Soho, eighty-three deaths in all, of which Elizabeth's was one. The epidemic itself had started very suddenly during the night of 31st August and 1st September, with very few cases of those that were attended in the first few days making a recovery.

Snow made enquiries, tracking down the source of these peoples' drinking water, building up in the process a formidable case against the Broad Street pump. He even investigated why some places such as the Poland Street workhouse seemed immune from the outbreak (they had their own pump) and how a death as far away as Gravesend could be tracked back to drinking water from this contaminated pump. He presented his findings to the Board of Guardians of St. James' Parish who were reluctant to believe him, but agreed to remove the pump handle as an experiment.

The report on the Cholera Outbreak in the Parish of St. James, Westminster

The report to the Board of Guardians contained John Snow's meticulously drawn map tracing the known cholera deaths in the area of the Broad Street pump. (On the map Little Windmill Street appeared in Zone 3.) Twenty-six people succumbed to the cholera epidemic in that street. Little Windmill Street (now Lexington Street) had at the time thirty-five inhabited houses (as well as workshops) with an estimated population of 620 people (17.7 per habitation). Cholera cases occurred in fourteen of the houses with a subsequent mortality rate of 4.1%. In comparison Broad Street itself had ninety fatalities with a population of 896 people living in forty-nine houses (18.2 per habitation). Thirty-five houses had cholera cases and the street had a 10% mortality rate. However, the worst mortality rate was found to be in Hopkins Street where the death rate was 18.5%.

Little Windmill Street as illustrated in Dr Snow's map



Snow's map indicates where the fatalities took place in Little Windmill Street and reveals there was another death in the Public House besides that of Elizabeth Shrimpton.

The civil death registration index shows that Margaret Greathead also succumbed to cholera, a disease which is stunning in its rapidity. From the onset of extreme diarrhoea, sharp muscular cramps, vomiting and fever, death can occur within 12-48 hours.

On the day of Elizabeth's death the one hundred and twenty-seven cholera fatalities for the area contrasted significantly with the total of three hundred and thirty-two deaths for the rest of London.

The daily deaths from the epidemic when at its height	
30th August 1854	3
31st August 1854	34
1st September 1854	142
2nd September 1854	127
3rd September 1854	62
4th September 1854	55
5th September 1854	26
6th September 1854	28
7th September 1854	22
8th September 1854	14

Many of the cholera patients were treated by the local Middlesex Hospital which also published a report in 1855 on the treatment and subsequent mortality rates of its patients. The hospital admitted people suffering from cholera between the period 25th July to 14th November 1854 a total of 113 days. The youngest patient was 16 months and the oldest 68 years.

Age	Males Admitted	Males Died	Females Admitted	Females Died	Total Admitted	Total Died	Total Mortality Rate
Under 5	5	4	6	4	11	8	73%
5-15	27	8	14	4	41	12	29%
15-30	40	18	41	18	81	36	44%
30-45	32	25	26	12	58	37	64%
45-60	14	10	18	12	32	22	69%
Over 60	3	3	5	5	8	8	100%
Total	121	68	110	55	231	123	53%
The male mortality rate was 56% compared to the female mortality rate of 50%							

The treatment of cholera

On admission the cholera patients were placed in a hot bath of 104° F for a few minutes. An emetic of mustard and salt was then administered. Hot applications, hot bottles and turpentine formentations were subsequently applied. A large number of patients at this point rallied but their improvement was only transitory. The fourth treatment was to cover the front of the chest and abdomen with a large sinapism (mustard plaster). Where the cramp was severe, turpentine liniment was rubbed on the painful part.
Depending on their own medical hypothesis as to the cause of cholera; individual hospital doctors administered an array of different treatments to their allocated patients. As shown in the table.

Treatments administered to patients by doctors at the Middlesex Hospital							
Treatments	Males		Females		Total		Total %
	Admitted	Died	Admitted	Died	Admitted	Died	Died
Salines alone	34	16	39	15	73	31	42.5%
Mixed saline & calomel	48	24	40	25	88	49	55.7%
Calomel	3	2	5	3	8	5	62.5%
Saline with cajaput oil	1	1	4	2	5	3	60%
Chloroform, camphor etc.	3	0	1	0	4	0	0%
Castor oil	10	7	6	1	16	8	50%
Sulphuric acid	10	7	11	6	21	13	61.9%
Acetate of lead	0	0	1	0	1	0	0%
Hyposulphite	3	3	0	0	3	3	100%

of soda							
Quinine	9	8	1	1	10	9	90%
Nitrous Oxide gas	0	0	1	1	1	1	100%
Stimulants alone	0	0	1	1	1	1	100%
Totals	121	68	110	55	231	123	53.2%

According to the Middlesex Hospital's report, the varieties of treatments were applied in the following ways. Brandy, when administered, was given to an adult in doses of half an ounce every half an hour. The saline mixture, which was composed of chlorate of potash, carbonate of soda and of chloride of sodium, was administered half hourly. Injections of broth, salt and turpentine were administered every three, four or six hours. Saline and calomel were given every half an hour with ten grains of calomel after the emetic had acted. The majority dose of three grains was repeated every two hours. In some patients half a grain of opium was given with the first dose of calomel.

Hyposulphite of soda was suggested as a treatment by the theory which ascribed the symptoms of cholera to a parasitical fungus or vegetable, the acid of the salt being a powerful agent in destroying vegetable life. The salt was given in drachma doses or seven grains Troy (twenty-four Troy grains being equal to one pennyweight) every half an hour, preceded by an emetic of sulphate of copper. An enemata containing the hyposulphite was also administered. The hospital report observed that the treatment did not appear to produce the least effect on the symptoms! Sulphuric acid was administered to twenty-one patients based on the hypothesis that it was necessary to change the alkaline reaction of the evacuations. This treatment was also observed to be ineffective.

The patient given nitrous oxide gas was made to inhale ten gallons within a twenty-four period. Another patient was given oxygen to inhale with similar results recorded as 'less striking' than those produced by the laughing gas although they ultimately died. Injections of fluid into two patients' veins consisted of water two pints, albumen 1 ¾ oz, chloride of sodium ninety grains, chloride of potassium nine grains, phosphate of soda five grains, carbonate of soda twenty-one grains, sulphate of soda seven grains, oxide of iron twelve grains. The fluid produced was heated to a temperature of 105°F and a pint of each solution was injected into the vein. Both patients subsequently died.

The Middlesex Hospital report concluded on the different potential outcomes of the treatments administered to the patients and stated 'on the tables showing mortality taking into account the unequal severity of the cases little difference was observed'. Small wonder that The Medical Council of the Board of Health in 1854 concluded 'little hope remains, excepting by a happy chance "of empiricism" and that in 67% of the virulent cases death was inevitable'.

Elizabeth Shrimpton was not taken to the Middlesex Hospital. The speed of the symptoms and her subsequent death at home indicate that, if she was treated at all it was by a local doctor. In 1857, one such man, Henry JEANNERET, published his own views on the 'effectual and expeditious method of cure' based on the case notes of his treatment of one 47 year old woman shortly before the epidemic took hold. He first administered sulphuric acid to the patient for several hours without the slightest benefit on Sunday 13th August 1854. A drop of essence of peppermint gave her

transient relief for the uneasiness of her stomach, while ten drops of tincture and an opiate (likely to be laudanum derived from opium) added to the peppermint diminished the discharge. Large quantities of wine and spirits diluted or pure were given for her thirst (which had the added benefit of countering her depression). Ether (by inhalation) was also tried as well as cayenne pepper and ammonia, but 'without any manifest advantage of impression of warmth'. Citrate of potash in effervescence was frequently administered from the outset of her symptoms.

By Monday her disease had disappeared but her general malaise remained. On Wednesday she relapsed and opiates and stimulants were used again, but the effects were not sufficiently permanent. On Thursday morning the disease reappeared with augmented severity and accompanied by a great depression. Jeanneret feared to repeat the opiate treatment 'having more apprehension of the remedy than the disease'. Relief he now thought could only be obtained from the peppermint despite the effect being so transient. Camphor then suggested itself to him, combined with an aromatic confection as a carminative. According to him in a quarter of an hour all symptoms of cholera had vanished excepting the debility. It is left to supposition whether this treatment had actually cured his patient.

The Broad Street pump

Snow's meticulous and painstaking research was, despite bureaucratic inertia and medical disbelief a major contribution to the public health reforms which slowly followed the 1854 outbreak. At the time of the epidemic the temperature in London in the shade was between 80^0 and 85^0F. Water hydrants or street pumps provided the only source of water, but they opened infrequently and not always as scheduled. Snow believed, as there had been deaths from cholera just before the epidemic not far from the Broad Street pump, the evacuations from these patients had drained into it via their cesspool and polluted the pump waters. For many years to come open and undrained cesspools were to remain a feature of Soho with an estimated 200,000 across the whole of London in 1854. It was not until 1883 that Dr. Robert KOCH made the actual discovery of the comma-shaped bacillus of cholera. Through microscopic examination he ascertained that excrement may retain cholera bacteria for a good while following the actual attack of the disease, thus vindicating John Snow's research and his hypothesis that cholera was waterborne and taken into the system by mouth from contaminated water.

The aftermath

Elizabeth and her sister's death and burials would have been hasty and unceremonious affairs. Few if any of their relatives even knew of the disaster which was overwhelming the area Elizabeth had so inopportunely chosen to visit. John Snow wrote of the subsequent deaths in Westminster.

'The mortality appears to have fallen pretty equally amongst all classes, in proportion to their numbers. Masters are not distinguished from journeymen in the registration returns of this district, but, judging from my own observation, I consider that out of rather more than six hundred deaths, there were about one hundred in the families of tradesmen and other resident house-holders. One hundred and five persons who had been removed from this district died in Middlesex, University College and other hospitals, and two hundred and six persons were buried at the expense of St. James's parish; the latter number includes many of those who died in the hospitals, and a great number who were far from being paupers, and who would on any other occasion have been buried by their friends,

who, at this time were either not aware of the calamity or were themselves overwhelmed by it.'

The Times editorial 15th September 1854 described the eerie scenes around Broad Street following the epidemic and conveys some of the hysteria and panic it engendered in Londoners.

'The outbreak of cholera in the vicinity of Golden-square is now subsiding, but the passenger through the streets which compose that district will see many evidences of the alarming severity of the attack. Men and women in mourning are to be found in great numbers; and the chief topic of conversation is the recent epidemic….At every turn the instructions of the new Board of Health stare you in the face…The most remarkable evidence of all, however, and the most important, consists in the continual presence of lime in the roadways. The puddles are white and milky with it, the stones are smeared with it; great splashes of it lie about in the gutters, and the air is redolent with its strong and not very agreeable odour… The shopkeepers have dismal stories to tell—how they would hear in the evening that one of their neighbours whom they had been talking with in the morning had expired after a few hours of agony and terror. It has even been asserted that the number of corpses was so great that they were removed wholesale in dead-carts for want of sufficient hearses to convey them; but let us hope this is incorrect.'

Elizabeth and her sister's place of burial has no gravestone to remember them by, unlike Elizabeth's eldest son Henry whose death on 7th November 1859 is inscribed on his gravestone in the Old Cemetery, Hill Lane, Southampton. He was not however buried beneath the stone. The inscription indicates the reason – yellow fever!!

Sources

Report of the Cholera Outbreak in the Parish of St. James, Westminster during the Autumn of 1854. Presented to the Vestry by the Cholera inquiry Committee, July 1855 published London 1855 – British Library
The Middlesex Hospital Report on the Cholera Patients admitted into the hospital during 1854 S. W. Sibley published London 1855 – British Library
Epidemic Cholera, Diarrhoea and Dysentery. Pointing out an effectual and expeditious method of cure, etc. Henry Jeanneret published London 1857 – British Library

Published March 2005 Volume 31 N o4 Root and Branch, the journal of the West Surrey Family History Society
ISSN 0306-9958