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The art of medicine

Bills of Mortality: tracking disease in early modern London

In a plague year, the numbers are the narrative. "The Bill of Mortality, to all our griefs, is encreased 399 this week, and the encrease general through the whole city and suburbs, which makes us all sad", noted Londoner Samuel Pepys on Nov 9, 1665. Those who have been following the toll of coronavirus disease 2019 (COVID-19) infections and deaths in the news and on social media will know how Pepys felt. But what was the Bill of Mortality?

Published by the Worshipful Company of Parish Clerks in London, UK, the weekly Bill of Mortality was a single sheet of paper that listed on one side the mortality figures for each of the 130 parishes of London, and on the other the various causes of death. For example, the Bill of Mortality for Oct 31 to Nov 7, 1665—to which Pepys referred—reported that, among other causes, 1414 people died of "Plague", 61 of "Consumption", and that one was "Found dead in the Fields at St. Mary Islington". John Bell's 1665 publication *London's Remembrancer* states that "the *Bill of Mortality* is of very great use…it giveth a general notice of the Plague, and a particular Accompt of the places which are therewith infected, to the end such places may be shunned and avoided." But the Bills were much more than an early warning system for disease outbreaks. According to

The Diſeaſes and Caſualties this Week.

		Impoſthume	1
		Infants	7
		Kingſevill	1
		Mouldfallen	1
		Kild accidentally with a Carbine, at St. Michael Woodſtreet	1
		Overlaid	1
Abortive	2	Rickets	9
Aged	32	Riſing of the Lights	2
Bleeding	1	Rupture	2
Childbed	5	Scalded in a Brewers Maſh, at St. Giles Cripplegate	1
Chriſoms	9	Scurvy	4
Collick	1	Spotted Feaver	2
Conſumption	65	Stilborn	13
Convulſion	41	Stopping of the Stomach	11
Cough	5	Suddenly	1
Dropſie	43	Surfeit	7
Drowned at S Kathar. Tower	1	Teeth	27
Feaver	47	Tiſſick	12
Flox and Small-pox	15	Ulcer	1
Flux	3	Vomiting	1
Found dead in the Street at Stepney	1	Winde	1
Griping in the Guts	15	Wormes	1

Chriſtned: Males 121, Females 111, In all 232. Buried: Males 195, Females 198, In all 393. Plague 0.

Decreaſed in the Burials this Week 69

Pariſhes clear of the Plague 130 Pariſhes Infected 0

The Aſsize of Bread ſet forth by Order of the Lord Maior and Court of Aldermen,
A penny Wheaten Loaf to contain Eleven Ounces, and three half-penny White Loaves the like weight.

Bills of Mortality, February 21–28, 1664/Wellcome Collection, CC BY 4.0

a 1680 history of the Bills of Mortality, in 1629 "two sorts of weekly bills were printed One sort with the Diseases and Casualties on the backside, And the other without". The more detailed version carried the day, and the Bills became a complex hybrid of commercial news service, public health measure, and scientific publication.

The Company of Parish Clerks recognised and catered to public interest in mortality statistics to grow sales and subscriptions, and maintain their monopoly. There was certainly money in it. The cost to the Company of Parish Clerks of their charter in the late 1630s was over £88, including a clock, a salmon, and ten sugar loaves for Archbishop William Laud. In terms of revenue, the City of London paid the Company of Parish Clerks £4 annually for the Bills of Mortality in 1624, and £15 in 1631; the purchase cost of the printed Bills, meanwhile, was 1 pence individually, or 4 shillings for an annual subscription. Historian Stephen Greenberg estimates weekly circulation of 5000–6000 copies of the Bills of Mortality in the early 17th century.

How did the Company of Parish Clerks manage to collect, compile, and disseminate data on mortality? There were four main stages: gathering of raw data on causes of death; collation of these data; printing of the Bills; and distribution. In the first stage—the data gathering—we can identify parallels with the modern method of task-shifting. When anyone died, the bell of the parish church was rung, and the sexton (who had responsibility for preparing the grave) alerted the searchers. The searchers were not medical professionals: rather, they were usually pairs of older women who were recipients of parish money, and their job was to determine the cause of death.

Searchers have had a bad press over the years. For example, searchers are indirectly responsible for the demise of William Shakespeare's Romeo and Juliet. Believing that the messenger to Romeo is "in a house / Where the infectious pestilence did reign", they lock him up and prevent him delivering the vital information that Juliet has only feigned her death. But criticism of the searchers, whether by their contemporaries or historians, is not necessarily fair. It was not feasible—especially in plague years—to have employed physicians, apothecaries, or surgeons to determine causes of death at anything like the scale required. Even if it had been, would it have resulted in higher-quality data in an age when diagnosis consisted of the observation of external signs, the visual inspection of bodily fluids, and history-taking from the afflicted individual or other informants? Indeed, the role of women in informal medical treatment and nursing care in the domestic sphere might have made them ideal, when older, to use their practical experience and local knowledge

to determine cause of death with an accuracy that was good enough for the purposes of the Bills of Mortality. Moreover, they had at least some vernacular literature that might help. Steven Bradwell's *A Watch-Man for the Pest* (1625) includes signs that may be observed or relayed via informants, including "great trouble and oppression of the heart, that the partie unquietly rowles up and downe for rest from one place to another".

The pathway that information took from the searchers to the central Parish Clerks' Company Hall is summarised in orders published by the Corporation of London in 1625. The orders state that the searchers should "by vertue of their oath, make true report to the Constable of that precinct… to the intent that true notice may bee given…to the Clarke of the Parish, and from him to the Clarke of the Parish Clarkes, that true certificate may be made". The punishments for breaking this chain of communication testify to its importance: searchers who fail in their duties are threatened with "the Pillorie" and "corporall paine".

At what point were the various causes of death standardised into the form published in the Bills of Mortality? A stable inventory of terms would have minimised error during compilation and printing, and kept the Bills to a manageable length. A set of orders issued to the Clerks in 1695 provides one solution to this puzzle. They mandate that "Parish-Clerks…shall henceforth make their Weekly Reports of Christenings and Burials in Manner and Form as is expressed in Blanks provided by the Company of Parish-Clerks…in order to prevent those Irregular Reports, and the many frequent Mistakes in the Weekly Bills". Therefore, the Clerks were using preprinted forms (of which none has survived) to speed the process of data collation by the end of the 17th century. It is possible that these forms were similar in format to the Bills in the 1664–69 volume of the Parish Clerks' Bills of Mortality held at London's Guildhall Library, which consist of preprinted categories for date, parish name, and bread price, and have a blank space to be filled in by hand for disease categories. Clerks might have derived the disease categories for their "Blanks" from previously printed Bills, with new and unique causes of death added as appropriate.

Swiftness was of the essence in converting multiple parish reports into a single, concise Bill of Mortality. From 1640, the deadline for Clerks to drop their returns into a special box in the Company Hall was 1800 h on Tuesday. Data from the bills were collated, and the bills printed, over Wednesday; copies were delivered to the Mayor and Aldermen, and the King and Privy Council, on Thursday morning, a couple of hours before they were made available to the general public. The Company of Parish Clerks' possession of their own printing press provided the advantages of speed, flexibility, and, most of all, security. Handling mortality data gave the Clerks social and political capital, as well as a business monopoly that needed to be guarded carefully. A 1610 note of the Company of Parish Clerks stated that "many false and untrue bills of the number of deaths, as well as of the common sickness called the plague, have been of late times and still are, delivered and given out by members of this Fellowship", resulting in "the public hurt and inconvenience of sundry the King's subjects, merchants, and others in their trade and residence beyond the seas". To prevent this epidemic of premature and fake news, it was ordered that "what brother of this Company soever shall by any cunning device practice, or means give away, disperse, utter, or declare, or by any sinister device, cast forth at any window, howle, or crevice of wall in this house, any bills or notes, whereby the reports of these returns for that week may be known or uttered abroad, before the book is given to the Lord Mayor, shall pay 10s. fine." The press was similarly under tight control: there were three locks to the press chamber, and the respective keys were held separately by three wardens. In short, the Clerks recognised that as the data accumulated, their value increased.

The distribution of the Bills of Mortality took two forms: delivery to subscribers and single sales. On the street, the Bills entered an intensely competitive market of street hawkers, with plenty of potential for friction. The Company of Parish Clerks' minutes of 1626 state that "William Harsnett, of St. Botolph Aldgate, complains of the delivery of Bills in his parish by one Francis Park, who is ordered to desist". On Jan 8, 1666, it is "Ordered that Noe Mercury women Hawkers or others…shall at any tyme hereafter have any weekely Bills deliver'd to them from the Hall, to avoid all future complaints"; however, as subsequent fines indicate, lucrative street sales could be hard to pass over.

The Bills of Mortality were read far outside of London, and possibly even beyond the British Isles. Pepys recorded the numbers in his diary, and Daniel Defoe used them to tell the story in his 1722 novel *A Journal of the Plague Year*. Their data were of enduring fascination even decades after their first appearance, as the publication of collected volumes of Bills from 1657 to 1758 suggests. This was all because the Parish Clerks used a system which allowed for data of good enough quality to be collected at low cost via the searchers; for these data to be collated and systematised rapidly by Clerks operating within a commonly understood framework of potential causes of death; for rapid and secure printing; and for distribution with at least some degree of revenue protection. Each stage of the process demonstrates the pressure of commercial forces, the need to maintain the Company of Parish Clerks' social and political standing, and the Clerks' desire to generate an authoritative chronicle of London's health. The continuing interest in and reliance on the Bills by modern-day historians indicates that, for the most part, London's Parish Clerks rose to these challenges and produced material that continues to attract readers—and support the construction of new narratives—today.

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